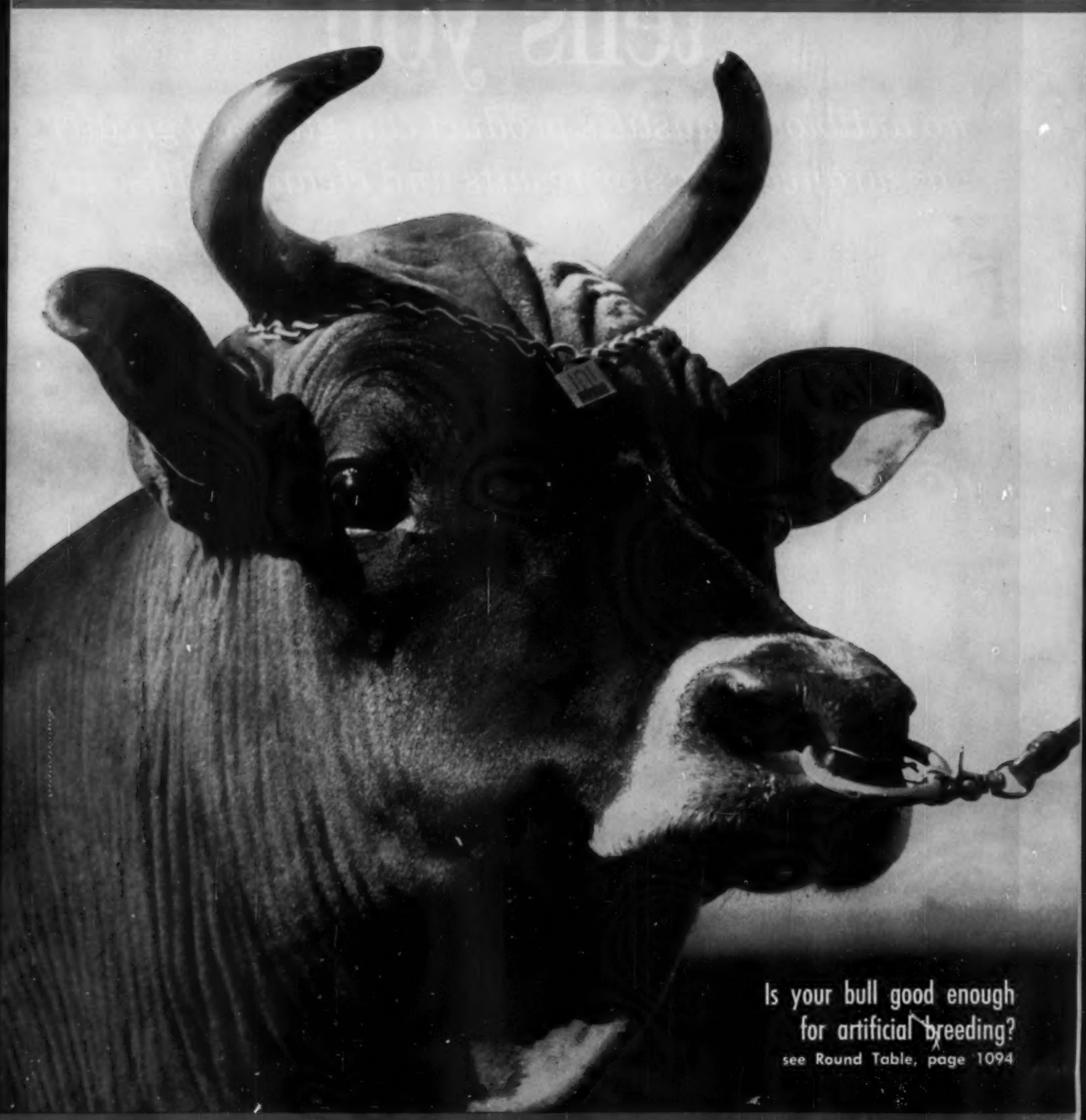
HOARD'S DAIRYMAN

NOVEMBER 25, 1961



Is your bull good enough for artificial breeding?

see Round Table, page 1094

The National Dairy Farm Magazine

Common sense tells you

no antibiotic mastitis product can give you greater assurance of faster results and cleaner milk-out

Terramycin . . . the only all-liquid treatment

These X-ray photos show better than words can describe the difference between an ointment-type treatment and Terramycin.

4 hours after treatment the ointment-type is still in globs. But, the liquid-formula has spread fast and evenly throughout the udder. You can see which type will disperse completely within the udder . . . give the greatest assurance of antibiotic action *within a single milking period* . . . and milk out fastest for the greatest assurance of clean milk.

The better the dispersion, the surer the results, the cleaner the milk-out

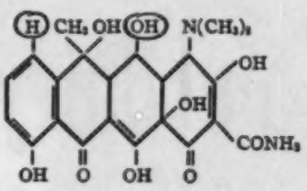
Terramycin is the only commercially available mastitis treatment with all of its disease-fighting activity ready for release right after treatment to help fight the infection. Fast action at the infection site means less damage to valuable milk-producing tissues, and surer results.

Once Terramycin's done its job, there's no wax, peanut oil, mineral oil, or ointment to slow down milk-out. It milks out clean and completely as only a liquid can.

Antibiotics in ointment-type treatments must first be dissolved—put into solution—before they can even start working. Result: Cows never get the benefit of a full-dose treatment at any one time, and treatment time is delayed.

This also is an important point to consider when you're treating dry cows.

The potency-protected molecule makes the difference



There is a difference in antibiotics. And Terramycin's got it with this potency-protected molecule. It's this unique molecule that explains why Terramycin for Mastitis is the only all-liquid treatment available. Because Terramycin is the only broad-spectrum farm antibiotic that can be formulated in a true solution without losing its punch in the tube or on the shelf.

You can be sure other treatments would be made this better way if they could. Tests show, however, they can lose their disease-fighting ability when in solutions of this type. That's why they're put in an ointment-type base undissolved.

Just one more reason why no other antibiotic is effective against more mastitis-causing organisms than Terramycin. Its dependable results have made it the largest selling brand by far.

Get Terramycin® for Mastitis at your animal health supplier's soon.

Pfizer

Chas. Pfizer & Co., Inc.
235 East 42nd Street
New York 17, N. Y.
Science for the world's well-being®

WARNING:

Milk taken from treated animals within 72 hours after latest treatment must not be used for food.

New ADA consumer research reveals:

Dairymen must sell the benefits of whole milk and dairy products in the well-balanced diet

Fifty percent of all Americans over the age of 15 are concerned about the diet-heart disease theory.

Seventeen percent are concerned about weight control to the point where they are on planned diets. The idea that dairy foods are "fattening" is growing.

Fortunately, there is still time. So far, only a small percentage of the consumers have taken action to eliminate or reduce fat and Dairy Foods in their diets. But we are living on borrowed time.

That's the gist of a new ADA consumer research study of the public's attitudes toward the use of Milk and Dairy Foods.

If those startling figures don't worry you, they should. Because they point up the problem that is facing the American dairyman today.

And there's only one way to solve a problem like this—face up to it. Let the public know, in an honest and forthright way, that Milk and Dairy Foods are an absolute necessity in the well-balanced diet—as important to health and well being as meat, fruits and vegetables and cereals.

That's just what ADA is doing

As soon as the facts of the new research were known, ADA went to work and developed a new series of ads on Milk and physical fitness. The ads feature slim, trim Dinah Shore. And Dinah really lets crash diets have it. She tells why drinking three glasses of Milk every day actually helps keep her weight down. She also explains that getting in trim begins with well-balanced meals and exercise.

You'll be seeing and hearing more about ADA's new physical fitness approach to selling Milk and Dairy Foods in the near future—both in National Magazines and on television.

This is a serious problem we face—a matter of survival. To lick it, we *must* present a united front.

If you earn your livelihood through the sale of Milk or Dairy Foods, you owe it to yourself to support your American Dairy Association.

american dairy association

20 North Wacker Drive • Chicago 6, Ill.

HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
W. D. Hoard & Sons Co.
Fort Atkinson, Wis.

W. D. Hoard

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Associate Editor, R. E. DAVENPORT

Advertising Manager, T. E. BJORK
Veterinary Editor, DR. E. A. WOELFFER

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November 25, 1961

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COVER PICTURE

Bulls used in artificial breeding is the subject of the second article in our Hoard's Dairyman Round Table, beginning on page 1094. It has been some time since we have featured a bull on the cover, so it seemed fitting that we use this good-headed Jersey bull.

He is Beacon's Standing Radar, 6-year-old bull owned by James Tharp, Columbia, Mo. He was the first prize aged bull and reserve grand champion at the National Dairy Cattle Congress, Waterloo, Iowa, last month.

This is a Hoard's Dairyman staff photo.

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 10th of the preceding month. For the 25th of the month issue, copy must be received before the 23th of the preceding month.

Washington Dairygrams

SIGNIFICANT SHIFT OF INFLUENCE MAY BE TAKING PLACE HERE AS ADVISORY GROUPS ARE FORMED. CONSTANT CONFLICT AMONG FARM ORGANIZATIONS FRUSTRATES GOVERNMENT PEOPLE, CAUSES THEM TO SEEK OTHER COUNSEL.

WHEN PRESIDENT APPOINTED NATIONAL AGRICULTURAL ADVISORY COMMISSION, HE POINTEDLY ASKED THE BIPARTISAN GROUP TO PUT ASIDE POLITICAL CONSIDERATIONS AND ORGANIZATIONAL TIES IN REACHING DECISIONS.

BUT ADVISORY GROUPS MUST PROVE THEMSELVES. QUESTION IS WHETHER THEY WILL DEVOTE THE TIME AND EFFORT TO DEVELOP SOLUTIONS TO COMPLICATED FARM PROBLEMS.

RADIOACTIVE FALLOUT PROBLEM BRINGS DAIRY LEADERS HERE FOR EXTENSIVE MEETINGS WITH GOVERNMENT OFFICIALS WHO WERE ASKED FOR FACTS, NOT SCARE HEADLINES, IN PRESS RELEASES ON SUBJECT.

LOSS OF EXPORT MARKETS FEARED AS EUROPEAN NATIONS WORK ON COMMON MARKET PLAN. AREA HAS PROVIDED MARKET FOR ABOUT $1 BILLION OF U.S. FARM EXPORTS, OR ONE-FIFTH OF TOTAL. FEED GRAINS MAY SUFFER MOST.

SOVIETS WOULD HAVE TO DETONATE A 50-MEGATON DEVICE EVERY TWO OR THREE DAYS FOR A YEAR BEFORE MILK BECAME DANGEROUS FOR HUMAN CONSUMPTION, ACCORDING TO AN ATOMIC ENERGY COMMISSION OFFICIAL.

FARM RESEARCH PROGRAMS ARE RECEIVING CAREFUL SCRUTINY HERE BY 24 ADVISORY GROUPS.

POULTRY INDUSTRY RECEIVES PRICE ASSISTANCE AS GOVERNMENT BUYS OVER 5½ MILLION POUNDS OF TURKEYS AND 24 MILLION POUNDS OF CHICKENS SINCE JULY 1 FOR SCHOOL LUNCH PROGRAM.

★ ★ ★

In YOUR next issue!

THINKING OF RAISING HEIFERS? Don't expect to get rich fast. Some are doing it successfully while others have given it up. Here are some of the facts you will want to consider before making a major investment.

A WINTER GRAZING PROGRAM FOR THE SOUTH . . . is reported by five dairy farmer members of the Hoard's Dairyman ROUND TABLE. They tell how and when they plant rye grass, rye, oats, or mixtures with clover, wheat, and vetch to provide grazing from September through June.

RECORDS ARE TO USE . . . but profit opportunities are lost on thousands of farms, not because of lack of records but for lack of investing time in analyzing them. Several examples are presented by the author.

AND MANY MORE . . .

Easy TO ORDER OR RENEW!

HOARD'S DAIRYMAN
Fort Atkinson, Wisconsin

☐ New
☐ Renewal

I enclose $_____ Please send me Hoard's Dairyman for _____ years.

Name_____ R. F. D._____

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SPECIALS

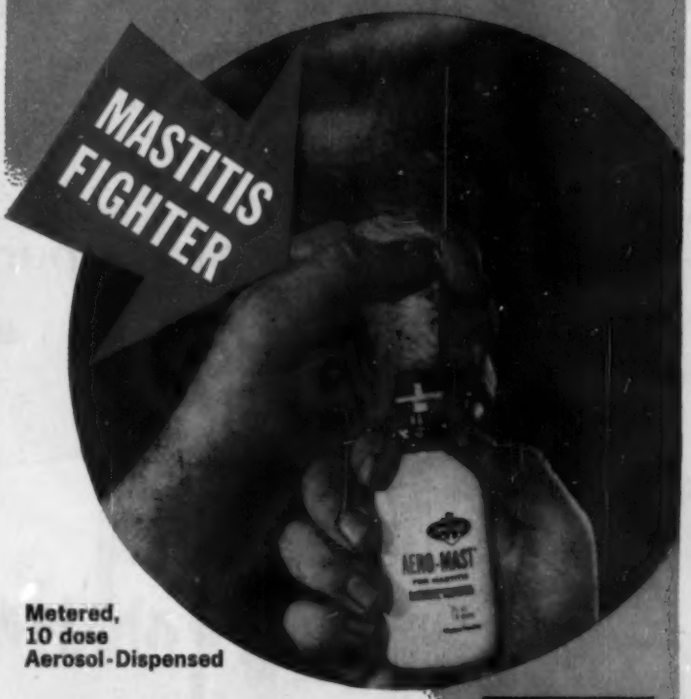
3 years $2.00 - 5 years $3.00 (Reg. price 1 year $1.00)

(CANADIAN: 1 Year—$2.00 — FOREIGN: 1 Year—$3.00)

NEW FROM ANCHOR

AERO-MAST

First Completely Automatic



Metered, 10 dose Aerosol-Dispensed

Another first from world-wide Anchor research technology! New AERO-MAST*, is the first *completely automatic*, aerosol-dispensed treatment for mastitis. It contains *three antibiotics* proved highly effective against seventeen commonly reported bacterial agents causing mastitis!

Anchor's New Aero-Mast dispenser contains ten potent doses of broad spectrum mastitis fighters against both common types and difficult cases. Each dispenser package also contains ten individually sterile teat tubes for more convenient, "metered dose" infusions . . . fully laboratory and field tested. AERO-MAST* is soluble in milk.

Now, just a press of the dispenser valve disperses an exact dose of Aero-Mast to the intermost recesses of the teat. Also, the special diluent used to suspend Aero-Mast antibiotics, is non-irritant and aids in complete dispersion throughout the affected gland. Ask for new, completely automatic AERO-MAST* at Anchor dealer's.

10 DOSE
DISPENSER WITH 10 STERILE TEAT TUBES

ANCHOR MASTI-MATIC*

Potent Individual Dose Mastitis Treatment

Another advanced Anchor product in the changing fight against mastitis. Available PENICILLIN FREE or regular Masti-Matic with PENICILLIN, to meet all state and milk shed regulations. Ask for the product you prefer. *As with all antibiotics, milk taken from dairy animals within 72 hours after the latest treatment for mastitis must not be used for human consumption.

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ANCHOR

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Why worry about test?

In the September 10 issue is a plea from a South Dakota dairyman asking why his cows test 2.6 per cent when they should test 3.6. This has a familiar ring to me.

I am a South Dakota DHIA supervisor. I hear that same lament often. Now that it has appeared in our well-informed and irreplaceable Hoard's Dairyman, I feel that some comment from South Dakota might not be amiss.

First, a well-thought-out bulletin is available and can be obtained from the dairy department of the South Dakota Extension Service, State College Station, South Dakota. The bulletin is entitled "Variations in fat content of milk," and is compiled by Kurtz and Hall of the dairy staff. The answers in the bulletin are very much along the same line as those given by Hoard's Dairyman, but they are a little more complete.

May I comment a little more on this very vital and timely subject? What I will say is based not on personal opinion alone, but on the results of 10 years of DHIA testing in Brown County and adjoining areas.

First, a little sarcasm. E. K. states his problem as a "trouble," i.e. his cows (a few giving 80 pounds of milk per day) test less than 3 per cent. (My word, what do you expect of a cow?) Say the cows tested 2.5 per cent. Each would be giving 2 pounds of fat per day or about 60 pounds per month, possibly 500 pounds fat in 305 days. (.025 x 80 = 2.0.) I wish more of us had that "trouble."

Here is another point. Most cows vary greatly in per cent of fat from day to day, even from milking to milking. Here are figures:

A herd near Mansfield, S. Dak., milked twice a day gave the following tests from three of the cows on January 14, 1960:

	p.m.	a.m.
Nance	3.9%	3.2%
Viv	3.6%	2.6%
Min	5.0%	4.0%

A cow on a dairy farm near Redfield, S. Dak., was milked three times a day for awhile and milkings were tested separately with these results on May 28, 1960:

10 p.m. - 21.5 pounds — 2.5 %
6 a.m. - 29.2 pounds — 3.3 %
1 p.m. - 24.2 pounds — 5.45%
(duplicate tests were 5.4 and 5.5%)

Average test for the day was 3.8 per cent.

These figures indicate (not necessarily prove) that there is no such thing as a percentage that is normal for a particular cow. Most of them vary widely.

What is so important about a high test? Isn't it more to the point to ask if a cow will produce over 400 pounds in the normal 305-day lactation? Under existing conditions here, a low tester with a high poundage of milk returns a little better milk value than a high tester with a lower or moderate amount of milk.

If I interpret the facts correctly, Hoard's Dairyman and the extension department say that you can influence the test to some extent, but not economically. Furthermore, good and accepted dairy practices tend to increase the amount of milk and butterfat produced, but not always the percentage, since pounds of butterfat produced are more constant (less variable) than percentage of butterfat.

South Dakota PERRY CLIFFORD

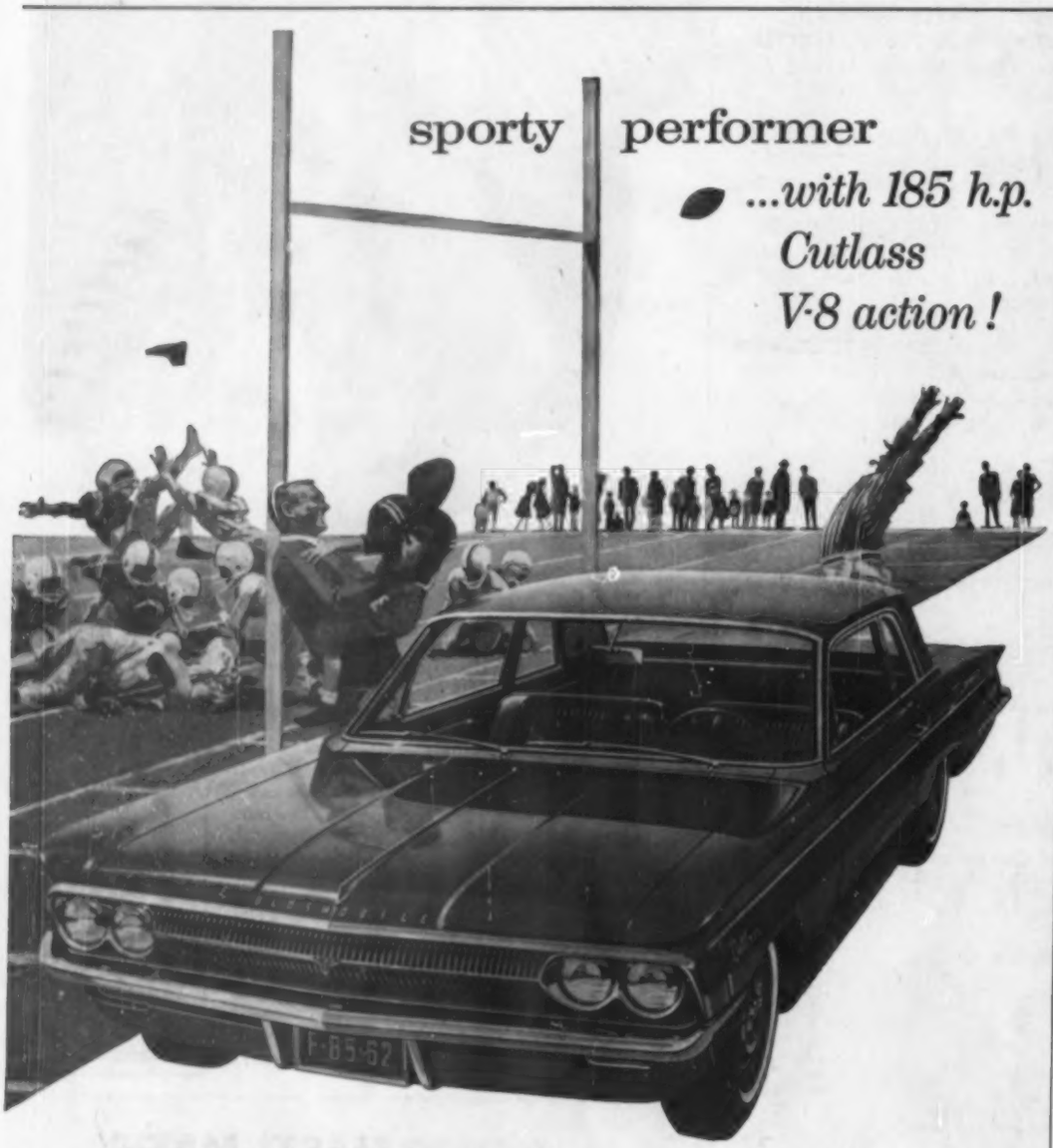
Bad credit experience

I have read Hoard's Dairyman for the past 40 years. At times, I have seen questionable statements made by individuals in your Opinions, Brickbats, Bouquets column but it seems to me that such slanderous misrepresentation contained in the statements of Mississippi's J. A. Randle, Jr., about companies financing dairy cattle on the installment plan and his accusations against auction firms and cattle dealers, accusing them of being "like Judas himself," is pretty far-fetched. This man claims they are falsifying bank rates, offering free insurance and no security required. The "whole mess is sickening" to him. He may have had an experience with one company, but in the companies I know of that are granting credit (of which ours is one and probably the largest in the business) the insurance rate is the standard manual rate.

There has never been any advertising of easy terms and the definition of a bank term is almost impossible to make today. The rate is an add-on, but it usually is 6 to 7 per cent and is not common interest. The majority of installment purchases financed by banks on automobiles and other types of merchandise is usually add-ons. In fact, the Illinois Bankers Association in the previous session of the Illinois legislature passed a law legalizing 7 per cent add-on on installment purchases or loans up to $7,500. Whether or not you would call this a bank rate is a matter of interpretation, but it is a rate used by banks.

At the present time, finance

(Continued on page 1089)



IN A CLASS BY ITSELF . . . IN THE LOW-PRICE FIELD! Here's a car as exciting as its name—*Cutlass!* Exciting in performance . . . with the ultra high-compression Cutlass 185 aluminum V-8 Engine . . . 4-barrel carburetor . . . 10.25-to-1 compression ratio . . . high-torque rear axle—*all as standard equipment!* Exciting in style too . . . with sporty Morocceen interiors . . . sparkling chrome accents . . . foam-cushioned bucket seats—*at no extra cost!* Drive a Cutlass—sharpest thing on four wheels—now in Coupe and Convertible models! Visit your dealer . . . and see why there's "*something extra*" about owning an Olds!

F-85 Cutlass
BETTER THAN EVER IN EVERY WAY
AND EVERY INCH AN OLDS

SEE YOUR LOCAL AUTHORIZED OLDSMOBILE QUALITY DEALER

"This DARI-KOOL Is Cooling 143 Pounds of Milk on One Kilowatt of Electricity!"

Writes MR. A. M. ANDERSON, Manager, Pierce-Pepin Electric Cooperative, Ellsworth, Wis.

PIERCE-PEPIN ELECTRIC COOPERATIVE
Ellsworth, Wisconsin
March 24, 1961

Mr. K. S. Hart, Vice President
Dairy Equipment Company
1444 E. Washington Avenue
Madison, Wisconsin

Dear Mr. Hart:

As you know, last fall we sold and installed a 650 gallon Dari-Kool equipped with a two horsepower compressor to the Wisconsin State College at River Falls, Wisconsin.

In order to prove Dari-Kool's economy of operation, we installed a meter on this cooler so as to cover the operating cost of the compressor, the water pump and agitator motor. Here are the results.

In the three month period of December, 1960, January and February, 1961, a total of 128,777 pounds of milk was cooled to 38 degrees using a total of 900 kilowatts. This amounts to 143 pounds of milk per kilowatt of electricity used. The electric rate in our area is 1½ cents per kilowatt. (This means that the Dari-Kool is cooling milk for slightly over 1 cent per 100 pounds).

In addition the blend temperature always remained well below 50 degrees.

You can readily understand why all of us are well pleased with Dari-Kool's economy and performance.

Very truly yours,

A. M. Anderson
Manager

AM/sn

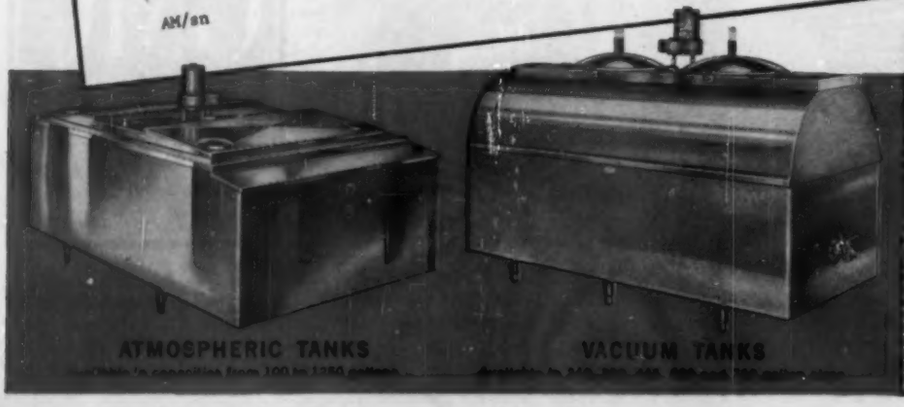
Top photo — Panoramic view of modern buildings at Wisconsin State College Experimental Farm, River Falls, Wis. Lower photo shows stainless steel 650-gallon Dari-Kool in the school's up-to-date milkhouse.

FASTEST COOLING—With Dari-Kool's 33° ice-water cooling milk is cooled faster than is possible with any other cooler or method. *Dari-Kool tanks are guaranteed to surpass 3A Cooling Standards.*

ACCURATE BUTTERFAT PAYMENT
With a Dari-Kool you receive accurate payment for butterfat because the test is not affected by churned milk *(floating with butterballs)* the result of *slow cooling.* Or by milk that has been damaged by *freezing.* Both are common faults of tanks using *"out-dated"* cooling methods. Both conditions lower quality of the milk. Both cost the dairyman money.

EMERGENCY COOLING — The loss of a tank of milk during a prolonged electric power failure could cost $100, or more. Dari-Kool's large reserve ice-bank provides valuable insurance during emergencies. Other cooling methods offer no protection.

DARI-KOOL
BULK MILK COOLERS



ATMOSPHERIC TANKS — VACUUM TANKS

MAIL THIS COUPON TODAY

DAIRY EQUIPMENT COMPANY
Dept. 94, Madison, Wisconsin

Please send new folder "How To Select Your New Bulk Milk Cooler" with a comparison of direct-expansion and Dari-Kool ice-bank coolers.

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Address.....

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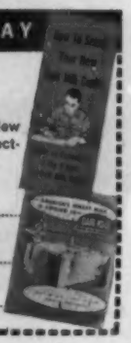


ONLY A 1962 GMC TRUCK gives you this built-in bonus: the economical 165 horsepower V-6, with the most pulling power at low rpm of any comparable truck engine. This year it's standard equipment! It's a true, truck-built V-6 engine, as dependable for rough going in the field as it is for hauling on the highway. See this great engine and investigate all the other built-in bonuses down at your GMC Dealer's. He's listed in the Yellow Pages. GMC Truck & Coach, a General Motors Division, Pontiac, Michigan.

"HOT SPOTS" ELIMINATED: The V-6 circulates more than 10,000 gallons of water per hour.

HIGH TORQUE, LESS FUEL COST: The V-6 out-works any comparable engine at lower rpm, where torque is most needed. Results? Less shifting, less gas consumption, less engine wear.

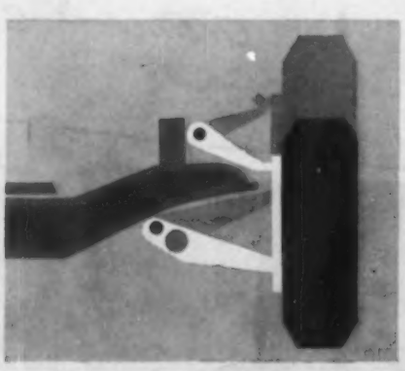
LONG-LIFE BEARINGS: The short, massive V-6 crankshaft has up to 60% more bearing area than in comparable engines.

EASY TO SERVICE: Compact V-6 design reduces downtime. Spark plugs, battery, generator, carburetor all easy to reach.

PERFORMANCE BONUS— EXCLUSIVE V-6 GAS ENGINE SPECIALLY BUILT FOR TOUGH FARM JOBS

YOU GET BUILT-IN BONUSES IN EVERY GMC FARM TRUCK

NO OTHER PICKUP HAS ALL THESE: (1) Exclusive V-6 engine, built only for GMC trucks. (2) Independent front suspension, for smoother ride, better handling. (3) Reinforced double-wall cab. (4) Lighter, stronger, frames to resist flexing, extend cab and chassis life. (5) New 777 Super Enamels to keep your truck looking new longer. You get all this and more, included in the basic GMC price!



SUSPENSION FOR EVERY KIND OF DRIVING CONDITION . . . from expressways to plowed fields. GMC's advanced front suspension, plus torsion bar springs, lets each front wheel smooth out bumps separately. Results—less strain on truck, cargo, and driver.

GMC
GENERAL MOTORS CORPORATION
TRUCKS
FROM ½ TO 60 TONS

(Continued from page 1086)

companies are paying in excess of 5 per cent for money as they have to carry 15 to 20 per cent balances in the banks. On top of this, they must investigate all credit and, in a good many instances, travel thousands of miles to handle a particular sale of dairy cattle.

Having been in this business for over 38 years, we know the loss has been less than 1 per cent. In other words, the majority of farmers who have entered into the contract to purchase a herd of cows and get into the dairy business have been able to accomplish this in a matter of 2 to 3 years' time and thereby establish their own herd free of debt.

It is not luxury financing, but it is providing the means by which a farmer can make a living. There are always exceptions, but I have never come across one operating in a manner in which this letter describes the whole industry.

Illinois

T. E. COURTNEY, PRESIDENT
Northern Illinois Corporation
and Dairy Credit Company

Pay simple interest only?

In your September 10 issue, J. A. Randle, Jr., says, "Pay simple interest only." I would like to know how he goes about it, unless it is different where he lives than it is in the state of Maine.

To get a loan from FHA, the Federal Land Bank, or Production Credit here, you have to be in debt before you start. They don't want to do business with a man who will pay it back in a year or two because they don't want to bother to make out new notes. They want someone who can't hold his head above water.

Maine EDWIN C. DOW

Has 1906 copy of Hoard's Dairyman

This is in answer to Mrs. M. E. Handel of Washington, in your August 25 issue, who has a copy of Hoard's Dairyman, May 15, 1914.

In checking my old copies I find I have one dated October 12, 1906. Who can beat this? I often use it in exhibits of "the old days."

Wisconsin D. W. SCHEID
Vo-ag instructor

Zero grazing in 1875

In the course of some historical research, I came across the following passage in an 1875 publication "The Cattle of Great Britain," by J. Coleman. I thought it of sufficient interest to justify republishing on both sides of the Atlantic.

"Probably the most economical method of consuming our food is to keep cows tied up in a well-ventilated shed and bring the food to them, moving the grass as soon as it is sufficiently grown, and, in the case of arable land, depending upon successive crops of Italian rye grass, vetches, and so forth."

Scotland DR. E. CRESSWELL

Whole family enjoys it

I would like to say that we enjoy Hoard's Dairyman very much. We have been in the dairy business only four years and yours is a very educational magazine on cows and farming. The whole family enjoys reading it.

MR. AND MRS. V. G. RHOADES
Mississippi

Keep 'em milking with Pen-FZ

two-fisted approach

wins the fight against mastitis

Pen-FZ offers a powerful combination — a "two-fisted" approach to mastitis control: (1) exclusive nitrofurazone . . . (2) plus an antibiotic.

Antibiotics slow reproduction of mastitis organisms, but do not kill. The nitrofurans kill germs by starvation.

Containing both, Pen-FZ achieves effectiveness unequalled by other mastitis treatments.

Keep *your* cows milking . . . protect *your* herd health with Pen-FZ. Available in syringes or tubes.

Note: Milk from producing cows must be withheld from human consumption for 72 hours following treatment with Pen-FZ.

AH-29

FREE 2-oz. jar of Udder Ointment in special Pen-FZ Udder Care Kit. Look for the colorful counter display at your drug, feed or farm supply store. Ask for "Pen-off-zee."

Dairy health products that work

Udder Ointment—keeps udders in peak milking condition

Calf Scour Tabs — fights calf scours and pneumonia

POL — removes horns safely and painlessly

NFZ Puffer—protection against infection from wounds, excellent for pinkeye treatment.

Treat dry cows to help prevent "freshening flare-up"

If you have cows with a history of mastitis when in production, treat them when they're *dry* to help prevent "freshening flare-up."

Pen-FZ treatment of dry cows eliminates the problem of withholding milk from market after treatment. To reduce mastitis recurrence in your herd, follow the Pen-FZ "dry cow" treatment program:

For average problem — inject Pen-FZ in each quarter after last milking.

For chronic problem — inject Pen-FZ in each quarter immediately after last milking. Repeat treatment once per week for 2 weeks.

Write for free mastitis folder, "Prevent Freshening Flare-up."

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A *day-in-day-out* program to control mastitis in your herd

PREVENT...

Regular use of 'Nolvasan,' in a sanitizing solution of one tablespoon per gallon of water, will help you keep mastitis from getting a start and from spreading. Wash udders before each milking. Dip teat ends after milking. 'Nolvasan' destroys mastitis-causing bacteria. Keeps them from invading udder tissues. Stops their progress from cow to cow.

'Nolvasan' speeds the healing of scratches and injuries. Protects from milking to milking. Non-irritating. Will not cause chapping. Keep 'Nolvasan' on hand. Buy it by the gallon from your local veterinarian. Ask him, also, about vaccination with *Biotized Fortibac.*®

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TREAT...

'Soxipent' combines 2 selected antibiotics and 2 sulfas with cobalt for broad bacterial action, fast results. Its bacteria-killing ingredients disperse quickly throughout treated quarters while other components soothe and help to heal the inflamed udder tissues.

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the better sanitizing agent

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powerful mastitis treatment

HOARD'S DAIRYMAN
Founded in 1885

Can you select for easy and regular calving?

It is a waste of time and money say some researchers. Others claim some breeding factors are inherited. Farmers can benefit through careful culling and selection.

by C. J. Wilcox

WILL THE CALF INHERIT its mother's record for obvious heat signs, early conception, ease of calving, and prompt cleaning? If this is possible, an efficient herd can be built up more rapidly.

LOSS OF a single heat period per cow in a 50-cow herd can cut profits $1,000 per year. Dairy economists claim failure to conceive costs 80 cents to $1 per cow per day.

Daily management of the herd remains extremely important in getting cows bred. Through research we've learned when and how to breed. And we keep a close lookout for reproductive diseases which could put us out of business.

Yet 20 to 30 per cent of the cows we cull go out for reproductive failure. Though well-managed herds get one pregnancy from less than two services on their fertile cows, many herds need an average of 2.5 to 3 services per pregnancy.

Is weak genetic make-up responsible? Recent research has once again started the controversy on whether efficient reproduction is inherited. What sort of a cow would we like to have, from the reproductive angle?

We need a cow which can freshen normally without assistance, give us a living calf, and clean in short order. This cow should recover quickly and come in heat in good breeding condition within 60 to 90 days. She should be reasonably demonstrative about it, so we don't have to watch the herd through a microscope to see her.

But we don't want a cow with cystic ovaries and nymphomania which stirs up the whole herd for a week at a time and won't conceive anyway. A cow in good breeding condition should conceive in one or two services.

We would like a calf every 12 months, but will settle for a herd average of one every 13 months. Twins are nice but they are small, strain the cow, lead to retained placentas and females of a mixed-sex pair are usually freemartins.

Since it takes all of the first lactation and more for a cow to pay her own raising costs, long-lived, regular reproducers are desirable.

The key to the present controversy lies in whether reproductive performance is inherited. If not, we would be foolish to select for it. Yet, ignoring it would certainly lead to a genetic deterioration of our cattle if it were inherited to even a moderate degree.

On the one side are the scientists who do not feel that breeding efficiency is inherited. They agree that certain forms of sterility can be inherited (anatomical malformations and the like) but correctly point out that these conditions are self-limiting. Afflicted animals cannot transmit the condition since they are unable to reproduce.

Furthermore, extensive and well-done analyses of data from various sources have shown that the heritability of number of services per conception is zero or close to zero. Repeatability of the number of services per conception from year to year is also about zero. This means we cannot even predict what will happen to a given cow next year with any degree of confidence!

Other measures of heritability have also been zero or close to it. These measures include days to first service, the interval from first service to conception, non-return to first service, and regularity of estrus. So far, the evidence is quite convincing.

Many remain unconvinced, however. They point to other measures of reproduction and to specific causes of failure. The average time between calves in cows with two or more calves has been used as a measure. This is called average calving interval.

The inability of a cow to conceive for any reason, such as cystic ovaries, retained placenta, and so forth, would lead to long calving intervals. Ability to recover from freshening, come in heat early, and conceive readily would lead to short intervals. Thus calving interval is not a very specific measure of reproduction, but is related to our desire to have a calf every 12 months.

Although estimates of zero heritability have been presented by some, additional estimates of 0.2 to 0.4 are shown by others. (These compare with estimates of heritability of milk yield of about 0.2, and fat percentage of 0.5 or 0.6, for example.)

Cystic ovaries . . .

The tendency to have cystic ovaries seems to be inherited to some degree, although not all work shows this. My personal experience has been that cystic cows tend to be cystic again in subsequent years, and it seems logical that the hormonal imbalances involved may well be transmitted to offspring.

A cooperative project between Danish and Illinois workers showed the degree of expression of heat to be mildly inherited (0.21), but there was apparently only a very slight relationship between degree of expression and conception rate. No improvement in conception rate could be expected from selection for expression of heat.

The tendency to twin seems heritable, although the mode of transmission is not clear. Twins are more frequent when cystic ovaries have preceded the conception.

Most agree that retained placentas are heritable. Incidence is higher after twin births, but many single births also have the problem. Prompt and conscientious treatment will apparently allow the affected cows to reproduce normally in subsequent years, but this may distribute the tendency even more widely in future generations. Here we are working against natural selection by allowing affected animals to become parents again.

U.S.D.A. workers have reported recently that the heritability of longevity was close to zero. Their data were taken from a herd in which no cows had been culled for low production or poor type. In other herds, however, estimates of heritability of up to 0.4 have been reported.

Regardless of this conflict, a strong natural force is acting in the dairyman's favor. Cows able to avoid culling will leave more offspring in the herd. If longevity is heritable, subsequent generations will be automatically improved. *(Turn to page 1115)*

The author is an assistant professor of dairy husbandry, University of Florida.

Farm Flashes...

seasonal reminders and research notes for dairymen

NEW CROPS CAN BE DANGEROUS

An open bin of beans, wheat, or corn can be as deadly to livestock as an epidemic. Every year there are cases reported which illustrate how determined cattle can be. They will wander through broken fences, open unlocked gates, and walk a mile seeking the delicacies of harvest time.

In some cases, fences are in good repair and a farmer will feel safe in piling grain crops in the barnyard. However, the cattle get into these crops, gorge themselves, and die.

The various grains react differently in an animal. An Illinois veterinarian says that dry beans will expand to several times their original size. If the animal has gorged itself, this expansion can rupture the digestive tract, causing an agonizing death.

Death from overeating wheat, corn, and other grains is caused by toxins or poisons produced by chemical changes in the animal's stomach. Bloat can occur in any case.

The condition frequently is referred to as bovine founder or acute indigestion. Symptoms are overloading of the stomach, gas formation or bloat, poisoning, and agonizing pain due to swelling of stomach and intestines. The result is death due to bloat, absorption of poison, or rupture.

HUMAN ERRORS CAUSE FERTILITY LOSSES

A University of Minnesota veterinarian maintains that much of the tremendous cost of infertility in dairy cattle can be traced to the fact there are far too many human errors.

Dr. Raimunds Zemjanis, head of veterinary obstetrics at the University of Minnesota, says that the critical time in solving fertility problems is the period during which the cow is at peak production and appears healthiest. The owner or herdsman must watch carefully for signs of infertility during this time and should have pregnancy examinations made, accompanied by eventual treatment of problem animals.

The owner or herdsman's responsibility in preventing infertility losses consists of seeing that healthy cows are bred at the right time. To maintain high production, cows should calve every 12 months. Every time a cow comes into heat without being bred means a loss of three weeks or more before production can be resumed. Using a figure as low as $1 per day shows that losses from missed heats can soar easily to $100 or more per animal.

Failure to observe heat and the return to heat after failure to breed (repeat breeding) accounted for a total of 47 per cent of infertile dairy cows observed at the University's veterinary clinic.

FEEDS FOR DAIRY GOATS

Most feeds for dairy cattle also are suitable for dairy goats. From six to eight goats can be maintained on the amount of feed that one cow requires.

E. T. Oleskie, Rutgers University dairy specialist, says that a doe in milk should be allowed all the roughage she can eat, such as alfalfa, clover, or mixed hay and corn stover. She should receive liberal amounts of feed such as silage, carrots, rutabagas, parsnips, or turnips, in addition.

The grain feeds best suited to a goat ration are corn, oats, bran, barley, and linseed meal or linseed cake. Others that can be fed when they are available are cottonseed meal, brewers' grains, corn bran, gluten feed, beet pulp.

A ration that has proved satisfactory for does in milk during the winter season consists of 2 pounds of alfalfa or clover hay, 1½ pounds of corn silage or roots, and 1 to 2 pounds of grain.

The grain mixture consists of 100 pounds of corn, 100 of oats, 50 of bran, and 25 of linseed meal. A doe on pasture can receive 1 to 1½ pounds of this grain mixture daily.

Oleskie recommends feeding grain according to production, about a pound for every 3 or 4 pounds of milk produced, with a daily allowance of at least 1½ pounds.

Tastes and preferences of goats differ. One may prefer a ration that another may not like so well.

NEW HAY TESTING TECHNIQUE

A promising hay evaluation technique looks as if it can make forage digestibility work proceed faster. University of Wisconsin dairy research workers are using a technique involving an artificial rumen — laboratory glassware in which micro-organisms in rumen juice digest samples of the forage to be tested. [A similar approach to forage analysis, used in Massachusetts, was reported in Hoard's Dairyman October 10, 1960.]

They have found that the artificial rumen gives fast results which are very much like those they got by actually feeding hay to animals and measuring the digestibility.

Hay digestibility has been measured with four dairy steers and also with the artificial rumen. Hay samples cut in late May measured 70 per cent digestible dry matter in feeding tests, 71 per cent digestible according to the artificial rumen. For hay cut in early June, digestibility was a little less, but the two methods still agreed well.

On hay cut in early July, digestibility was down to around 55 per cent, but the artificial rumen results still agreed closely with the feeding trial results.

Research has shown also that dairy steers and goats are much alike in digesting hay, so goats can be used for economy in tests.

PREVENT PESTICIDES FROM FREEZING

Each year, dairymen have a stock of unused or partially used herbicides and other pest control chemicals that may be carried over the winter.

If they are worth keeping, they are worth protecting from cold. Low temperatures that may not even freeze the liquid could cause the chemical to settle out and accumulate at the bottom.

While it is possible to stir them up in the spring, once they are not stable, you cannot be sure they will stay in solution long enough to be used. In the case of the emulsifying agent, it may become inactive and you will not have a uniform mixture in the spray tank.

Store pesticides and herbicides in a barn or building where temperatures do not go below freezing. Do not store them in the same location with foodstuffs, potted plants, with seeds, or with fertilizers.

If labels are faded or weak, securely tag containers with a legible label, including the recommendation for use on your crops. The label will be even more unreadable by spring unless this is done.

CHECK PULLETS FOR PICKING

If allowed to go unchecked, cannibalism may cause a poultryman severe losses in egg production, as well as in the loss of birds.

There are many reasons why birds pick. Some may be exceptionally nervous and start to pick when placed in close quarters. In many instances, this is an inherent weakness.

The following suggestions are offered by a Rutgers University poultry specialist, if birds pick:

1. Immediately remove birds which are being picked and birds showing signs of blood in their beaks.
2. Feed about 3 pounds of whole oats to 100 birds on top of the mash once a day.
3. If birds are in heavy production, debeak them only as the last resort. If birds have to be debeaked, don't do the job during hot weather, and be sure to handle birds with extreme care.

DEPRECIATION — THIRD LARGEST COST

Cow-depreciation cost, per gallon of milk, is the third largest milk production cost, following cost of feed and labor.

Dr. R. B. Becker, Florida dairy husbandman, says dairymen must provide their cows with the kind of feed, care, and management conducive to a long, productive herd life.

A cow may cost $300 to raise or purchase and, when her useful period is over, bring $135 on the market. Thus, her depreciation would amount to $165. If the cow produced 8,000 pounds of milk while in the herd, the cow-depreciation cost would be nearly 18 cents per gallon.

On the other hand, if she produced 25,000 pounds of milk during her productive period, her depreciation cost would amount to less than 6 cents per gallon.

The difference between 18 and 6 cents per gallon for depreciation could be a deciding factor in determining the success or failure of a dairy herd operation.

WASH UDDER with warm sanitizing solution to remove dirt from udder and to stimulate letdown.

USE STRIP CUP as aid in detecting mastitis. Abnormal milk should be kept out of market milk.

APPLY MACHINE within 1 to 2 minutes after the udder has been properly washed and prepared.

MACHINE STRIP when flow nearly stops. Average stripping yields 1.5 pounds of high-fat milk.

REMOVE MACHINE gently as soon as the cow is milked out. Let air into one of teat cups first.

Get all the milk rapidly and safely with 5 basic steps

Then follow this procedure at every milking. Any abrupt change in the routine will result in a drop in milk production.

by Glen N. Schmidt

IN DISCUSSING milking procedures with farmers one is often asked the following questions, "What steps in the milking procedure can I eliminate without reducing milk production?", or "Do I need to give cows as much individual attention in milking as I have in the past?"

Through research on milk secretion, udder structure and function, and milking practices in the United States and many foreign countries we are able to recommend a milking procedure based on scientific knowledge.

In the past dairymen have considered the milking procedure an art instead of a science. With increased knowledge in this field we can definitely base it on scientific principles.

The dairy cow is a creature of habit. During the milking process she becomes conditioned to a series of steps that are followed by the milker. If the conditions remain the same, the cow will usually respond in the same manner. However, if the conditions vary, the cow's response also will vary and will usually result in a decrease in milk yield.

It is important for every milker to set up a series of steps which will insure maximum milk production and to keep these as consistent as possible from one milking to the next.

Let us now turn our attention to the steps involved in a good milking procedure. These steps apply whether a cow is milked in a stallbarn with conventional machine units or in a milking parlor.

Wash udder . . .

The first important step is to **wash the cow's udder with a warm sanitizing solution.** This should never be eliminated for two reasons. The first is that washing the udder and teats will remove most of the dirt. Obviously, this dirt should be removed so that it will not get into the milk. In most milking machines the milk will bathe the teats and the dirt will get into the milk.

It is unfortunate that in some herds the cow's teats are cleaner after milking than before. Milk is being attacked from many different angles such as antibiotic contamination, sediment count, and poor quality. Therefore, it behooves every farmer to produce the highest quality milk possible. Milk plants will reject milk with high sediment counts.

The second reason for washing the udder is to cause milk letdown. Complete and efficient milking requires the full development of milk letdown. This is best developed through proper washing of the teats and udder.

If the washing is done shortly before the milking machine is applied, the cow will associate it with milking which is a desirable process to her. This causes a stimulus to be sent to the brain which in turn causes the release of a hormone, oxytocin, from the pituitary gland, a small gland at base of brain.

This hormone is then transferred to the udder where it causes milk to be squeezed out of the milk-secretory tissues in the udder. This forces the milk down to the bottom of the udder where it can be obtained by a milking machine. If a cow does not develop maximum letdown, only a small fraction of the milk in the udder can be obtained.

Things such as the rattling of milk pails, turning on the milking machine motor, and feeding the cow shortly before milking may also cause milk letdown. When this occurs, the cow has associated it with the milking procedure. These factors should not be relied upon for causing milk letdown because they are difficult to control in a milking procedure and occur just before milking for only a few cows in the herd.

In a trial performed in New Zealand, the udder of one member of each pair of identical twins was washed and massaged for about 30 seconds while the udder of the other member was not washed. It was found that the twins having their udders washed produced 32 per cent more milk. This is just one example to illustrate the importance of washing the udder for milk letdown.

If a cow becomes frightened shortly before or during the milking process or if the routine is upset, an interference with this hormone takes place and complete letdown is not obtained. This is one of the major causes of day-to-day variation in milk production.

Check for mastitis . . .

The second step is to **use a strip plate to detect abnormal milk.** This will help to detect cows with mastitis. It is not a sure method to detect all mastitis cases, but it is a definite aid. It also prevents abnormal milk from getting into the bulk milk supply.

The third step is to **apply the milking machine.** The important point here is to apply the milking machine in one to two minutes after the udder washing has taken place. It takes about 45 seconds from the time the cow's udder is washed to *(Turn to page 1121)*

The author is an assistant professor of animal husbandry, Cornell University.

Is your BULL

SIRE ANALYSTS DISCUSS BULLS. Shown left to right: Ted Krueger, director of livestock division, Curtiss Breeding Service, Cary, Ill.; Fritz Hendrickson, operations manager, Tri-State Breeders Co-op, Westby, Wis.; Charles Krumm, general manager of the New York Artificial Breeders' Co-op, Ithaca, New York; and Charles Baldwin, production manager of COBA, Columbus, Ohio.

About 1 out of 10 considered worthy of inspection are brought into a stud. Low production and undesirable type in daughters are main reasons for rejection. Here are tips on what to do if you have a bull you believe is worth going into a stud.

KRUMM with Moreau Farms Chief, N.Y.A.B.C. Guernsey sire with 91 daughters having 166 records averaging 9,664 pounds milk, 475 pounds butterfat. There are 105 classified daughters including 4 Excellent, 36 Very Good, 40 Desirable, and 22 Acceptable. Among them is Senecaside Meryl.

OVER the past several years, artificial breeding associations have spent millions of dollars for bulls from the herds of our purebred breeders. Individual prices vary from a few hundred to as much as $50,000. Dairymen logically wonder why one bull is worth so much to one organization while many others are rejected.

The people best qualified to answer questions concerned with sire selection are those having (or who have had) the title "sire analyst," who devote most of their time pouring over production and classification information, figuring bull proofs, and trekking from one end of the country to the other searching for bulls to satisfy their customers.

At an artificial breeding conference last spring, Hoard's Dairyman cornered four of these men and asked many of the questions that have been raised by our readers. Here are our questions and their answers:

Is there a plentiful supply of good bulls available?

Ted Krueger, Curtiss Breeding Service: Bulls that are good in the eyes of a bull stud are in short supply. This does vary, however, within breeds.

Fritz Hendrickson, Tri-State Breeders Co-op: There are more bulls available now than there used to be, primarily because of the prices that are being paid for bulls. I think more dairymen are hanging on to their bulls much longer than they used to, with the idea they can sell it to an A.I. organization. However, there are certain bloodlines in which we do have trouble finding what we want.

Charles "Charlie" Krumm, New York Artificial Breeders' Cooperative: There is a sufficient supply of good bulls, but a scarcity of outstanding ones, the type being sought by A.I. breeding organizations.

Charles "Chuck" Baldwin, Central Ohio Breeding Association: There is certainly a good supply of good bulls; the problem is one of identification, how to rank them, or compare them with bulls previously purchased.

Krumm: I think we could increase the supply of good ones if we had more herds on test and more herds on classification. There would be a greater over-all supply from which to choose.

Baldwin: The situation can be helped by the breeders in the design of their proving of the bulls they are using so they will have a contemporary comparison available with other proven bulls.

What are your best leads for finding prospective bulls?

Hendrickson: One of the best is the breeder from whom you have previously bought. Another is breed magazines. Also, there are many breeders in the business of selling bulls who contact all organizations.

Krumm: The majority of N.Y.A.B.C. proved sires are A.I. proved through regular use in artificial breeding. The many cow families and young sire prospects required for this program are located through listings of top daughters by outstanding sires, leads from N.Y.A.B.C. personnel and committeemen, breed journals, owners, and others interested. Similar channels supply leads on naturally proved sires.

Baldwin: Breed personnel provide many of our good leads.

Krueger: Our field organizations send in quite a few leads, plus breed publications.

Hendrickson: Charlie mentions these young bulls. We are always on the lookout for outstanding cows from outstanding cow families which we are mating to bulls of our choice to produce young bulls coming into our proving project.

What information is most often lacking on prospective bulls?

Krumm: Most lacking at the time of inspection is complete information on every daughter that has been born. Many times we get a list of the daughters still in the herd, but this does not include important information on daughters or calves born that had deformities, and so forth. Very often, we do not hear of the animals that have been culled for type or production. Even though we find detailed information on daughters as to classification and production, we need more than that. Used a great deal more now is detailed information on contemporaries, or stablemates — how the particular daughters compare with the other cows in that herd.

Baldwin: I think Charlie covered the subject thoroughly, but I would like to emphasize the necessity of obtaining a complete listing of daughters from the breed association. This uncovers daughters in other herds about which the breeder would know nothing and uncovers possible selection.

Krueger: Lots of times breeders will write to us with incomplete pedigrees and very little information on the background of the particular bull they are trying to sell us.

What is the minimum information you want before making a trip to see a bull?

Krueger: We desire preliminary records on 8 or 10 daughters; more are desirable.

Hendrickson: In this business, you have to keep following these bulls along, from the time the breeder purchases them until they have milking daughters. We try and follow them through the various stages. Even though they have just one or two milking daughters, we are interested in looking at them and following through on them. If they look outstanding and the bred heifers look outstanding, we may even bring the bull into the stud.

Krumm: In the neighborhood of 8 or 10 completed daughter records. Before we go, we want a list from the breed association of the daughters that should be of milking age so that these 10 daughters represent, prefer-

HOARD'S DAIRYMAN ROUND TABLE

good enough for artificial breeding?

HENDRICKSON with Autumn Sun of Lee's Hill, Brown Swiss sire whose U.S.D.A. A.I. proving on 21 daughter-dam pairs shows an increase of 1,173 pounds milk, 62 pounds fat. Classified Excellent, he sired 31 classified daughters including 7 Excellent, 18 Very Good, and 6 Good Plus.

BALDWIN and COBA manager Dick Kellogg pose with Basil Radar, Excellent, Senior Superior Sire, second high Century Sire on classification; 117 daughters average 9,277 M., 492 F. Ayrshire is Windrow Sixty Grand, Excellent, Double Approved, first bull of breed on milk and fat.

KRUEGER shown with Irvington Pride Admiral, recently purchased by Curtiss from W. I. King and Sons, Gaithersburg, Md. at a record price. His proof on 15 daughter-dam pairs shows an increase of 2,956 pounds milk, 114 pounds butterfat. His 15 classified daughters average 84.5.

ably, the first unselected 10 daughters rather than a chosen group of 10 daughters.

Baldwin: It was well covered by the others, but I don't think we need 10 completed records. We'd like 10 milked at least 3 months.

Hendrickson: The more records you have, the better, and we all would agree with that. To get these bulls when they are available, sometimes we have to settle for less than we'd like to have.

What do you like to see in the way of classification on the daughters of a bull?

Baldwin: In investigating a bull, we don't need official classification scores on the daughters. We feel we can make our own type analysis. However, after purchasing a bull, we feel that it is important to have the daughters officially classified. This takes it out of the realm of our judgment and puts it on an official, unbiased basis. We think this is important.

Krueger: We go along with Chuck on that. In the initial investigation, we determine our own type and if we decide to purchase, we ask for type classification.

Hendrickson: I go along with these boys. I think it is very important not only to have an unbiased opinion but, as Chuck mentioned, also for promotional reasons. Gold Medals on Holsteins and Gold Star ratings on Guernsey bulls give breeders a yardstick to use in comparing bulls. Of course, we want all daughters from all the bulls we use to be better than breed average because that is where breed improvement is going to come. Eventually we should improve over-all type.

Krumm: I agree generally with the comments made here. Our committee also makes its type decisions on the basis of their own personal assessment of the daughters. It would not be necessary to have classification at the time of purchase, but desirable. They definitely prefer to have classification data available on the daughters of proved sires entering the N.Y.A.B.C. stud.

What type characteristics are you particularly concerned with when no classification is available?

Baldwin: We are concerned primarily with trying to determine what a bull's strong transmitting potentials are on the various type characteristics that are most important. At the same time, we try to determine that he is not poor enough in the important ones to be discarded.

Krueger: We should be doing an over-all good job in all breakdowns. We are very concerned with the udder milking qualities, and the fact that he doesn't have a major fault.

Hendrickson: We are always interested in the type breakdown. The bull's daughters should be at least breed average in any one of them. There are many things you don't see on the score card, like temperament. Holsteins just came out with one called tractability (ability to get along with other cows), which I think is very important. Ease of milking is another; still another is the ability to convert feed into milk of which we know so very little; also reproduction, or the ability to reproduce at regular intervals. We know it is inherited to some extent.

Krumm: Even if official classification data is available, we have our own type appraisal based on the Cornell type appraisal system. As the others indicated, we place particular emphasis on udders and we don't want to see serious faults in any of the daughters. Functional characteristics are of special importance. I should emphasize again what Fritz said on ease of milking, which is tremendously important with machine milking. On this, the hired man often is a good one to consult.

How important is the individual bull classification?

Baldwin: We don't pay too much attention to it. We're concerned with his progeny, what he is transmitting.

Krueger: We consider the bull's classification an indicator of his transmitting ability for type. We also consider it in merchandising the bull.

Hendrickson: I think that's probably where it's most important. When people come to your headquarters to look at the sires, they like to see a bull that looks nice and one that would classify well. However, I think the job he is doing in the field is much more important than the way he looks, unless there is some physical defect that would limit his usefulness.

Krumm: Of very little importance. We're interested primarily in his daughters, but we check type on the bulls, at least to determine whether or not he has any major functional weakness that might crop up in his daughters or affect his usefulness for semen production.

How important is the bloodline?

Krueger: Bloodlines are considered very important for transmitting desirable characteristics. We try to offer a complete program of line breeding, emphasizing strength through certain lines of breeding.

Hendrickson: In addition to that, I think certain bloodlines are popular and have quite an advantage as far as resale is concerned. Therefore, we like to have bulls that are popular with the breeders because, generally, we think it gives them an advantage when they sell cattle.

Krumm: As far as the genetic potential in production or type, we feel that bloodline is relatively unimportant. We don't emphasize particular bloodlines. Rather, we are interested in the best over-all genetic potential. But, with the large number of bulls available through a stud, you generally have various bloodlines available for those who do put emphasis on this, as someone has mentioned, primarily for merchandising value or personal preference.

(Continued on next page)

HOARD'S DAIRYMAN ROUND TABLE

Baldwin: Here is a little different angle on bloodline popularity. I think it influences our selection some 5 to 10 years from now because bulls of a bloodline that are most popular now will yield the most bulls 5 years from now from which we have to pick.

What percentage of the bulls you buy are young, unproved bulls?

Hendrickson: We are putting in quite a few young bulls in the young sire proving project, especially Holsteins and Guernseys. I'd say, however, that around 80 per cent of our breedings are to proved bulls and around 20 per cent to young or unproved bulls.

Krumm: Because our breeding program is based primarily on A.I. proved sires developed from young sires, I'd say approximately 90 to 95 per cent of our purchases are what we consider carefully selected, young, analyzed sires. As far as use is concerned, approximately 85 per cent of N.Y.A.B.C. Holstein services are to proved sires.

Baldwin: It will amount to about 50 per cent in our purchases 5 years from now because we are starting young sire projects in most of our breeds. This is a sampling program of four young bulls a year per breed to be used in a specified group of herds that will total about 1,500 cows in each project.

Krueger: About 25 per cent of our bulls purchased are young bulls. These are put into a young sire proving program used in a great number of herds that both test and classify.

Krumm: I should explain my comments a little further. The young sires make up 90 to 95 per cent of our purchases. We put them into service and automatically withdraw them after 2,500 or 3,000 first services, then lay them on the shelf until they have at least 20 to 50 A.I. daughters with production and type information before we put them back in service.

How do your requirements differ for young bulls as compared to older bulls?

Krumm: For younger bulls, there is much greater emphasis on the pedigree. When choosing older bulls that have daughters, our emphasis is on performance of the progeny. When choosing our young, analyzed sires, we want complete information on production and type in the dams. We want the dams to be particularly outstanding, all the members of the cow family to be outstanding, and the sire to be outstanding. In an older bull, where he has shown his genetic competence through his progeny, we're willing to accept less information in his pedgree.

Baldwin: I agree. The only additional comment is that probably in a pedigree analysis most emphasis should be on the sires of the bulls. There is more information there as far as transmitting ability is concerned.

What percentage of the bulls you check are actually purchased?

Baldwin: Of the bulls we actually check (where we go out and look at the progeny), I'd say about 1 out of 10 are approved. There's a lot of preliminary weeding not included in the percentage of the bulls turned down.

Hendrickson: We probably look at a few more bulls than that in order to purchase one. Many times you will find two or three bulls that may be good enough but you only need one at that time.

Krumm: Taking the group as a whole (bulls or cows that look like they might be interesting) after additional checking, about 5 per cent of them qualify for our committee inspections. Of those inspected by the committee, approximately 50 per cent are purchased or signed for selective matings.

What is the major reason for turning down so many of these bulls?

Krueger: Most bulls are turned down because of low level of production or poor type in their daughters. A small percentage are turned down because their semen quality is not high enough for artificial breeding.

Hendrickson: Type and production of their progeny is the major reason for turning them down. Once you have them in the stud, you return a few because of poor fertility.

Krumm: The major reason for turning down mature bulls is some unsatisfactory production or type performance on their progeny. As far as young bulls are concerned, probably the greatest reason for turning them down is insufficient information on the ancestors. It's surprising how few of these really great cow families there are when you get to looking for them.

Baldwin: Again going back to Fritz's comments, it depends on your needs to a great extent. If you are looking at 10 bulls and you need to purchase only 1, you attempt to rank the bulls with the data you have and pick the best one.

Hendrickson: There is also, of course, the factor of a bull carrying undesirable recessives, and we have turned down many bulls because of that.

Are breeders usually fair in their appraisal when it comes to setting prices?

Hendrickson: I don't think they really know what their sires are worth, so they start out at an unreasonably high price, for fear they aren't going to be asking enough. There aren't too many breeders that have the opportunity of selling a bull to a bull stud and they may sell only one or two in their lifetime. Therefore, they really don't know the value of a bull they have and I think it is up to us to determine the bull's real value.

Krumm: I think most breeders want to be fair in their pricing, but I think the problem is just like ours, there are really no good, basic, uniform standards for applying a value to a sire. To a great extent, present prices are based on supply and demand and your own particular needs, and very often influenced by such imponderable things as glamor and merchandising. Unfortunately, price is a very poor criterion of measuring the genectic potential of a bull and, consequently, it's awfully hard for a breeder to try to set what he considers a fair price. I think he wants to.

Baldwin: I think it is difficult for an owner to assess or rank his bull fairly or properly. I think all of us are biased on our own product.

Krueger: We feel that most breeders, due to their inexperience in selling bulls, are possibly a little high in their evaluation.

Hendrickson: I don't believe most breeders really understand what goes into making a bull extremely valuable. They fail to realize the amount of promotion that it takes, the advertising, the importance of showing the daughters of the bull, and the fact you need the right kind of a pedigree to start with. There's a tremendous amount of work that the breeder has to do on his own to make a bull extremely valuable.

What routine examinations are made on prospective bulls?

Krumm: Those that generally are required by state law, naturally. They are TB, brucellosis, leptospirosis, and anaplasmosis in suspicious areas. They are inoculated for shipping fever prior to being accepted and, of course, they must appear desirable in type, be healthy, and functionally sound on the farm before we accept them, plus the fact we check the breeding efficiency of a service-age sire. Those are the detailed tests we would make before delivery. After delivery, of course, we go further.

Baldwin: Very well covered by Charlie. Usually, we don't try to run a fertility check before purchase. Instead, we try to examine the breeding record where he's been used. We don't feel that the one or two samples we might take would be a fair criteria of what the bull could do.

Krueger: The only further check we might make before leaving the farm would be to have the local veterinarian check for hardware and give us a complete medical history of the bull.

Are most of your bulls purchased outright, leased, or what other arrangements are made?

Hendrickson: Most of our bulls are purchased outright on a fertility contract. That is, we ask 150 days to test him out for fertility, providing he can pass all our examinations as far as disease, and so forth, are concerned. If at the end of the 150-day period we have determined that the bull is highly fertile, we will settle up, pay the balance due on the bill.

Krumm: We prefer outright purchase; in a few cases we have leased bulls.

Baldwin: We are leasing more bulls than we did previously. It helps to share the risk of longevity, especially on those bulls that command a higher price. Also, on older bulls, it spreads the payments over a more uniform period of time for both breeder and stud.

Krueger: We purchase most of our bulls under a bull-purchase contract. There are several that are leased that are not for sale by the breeder, but are offered on a select mating program with our organization.

Are the natural proofs listed accurate indicators of what a bull will transmit in artificial breeding?

Krueger: Natural proofs are indicators as to a bull's transmitting ability. We have seen bulls increase their natural proof and others have lowered it in artificial breeding. The management and environment must be taken into account in analyzing a natural proof.

Hendrickson: I don't believe the natural proving of a bull is an indication as to what he will do in A.I. It's pretty much an indication of the environment in which the daughters of a particular bull have been raised. I think all it really indicates is that it might repeat where you have like conditions. That is, if the bull is mated back to the same kind of cows and his daughters are raised under the same conditions, then you might have repeatability. Otherwise, I don't think they mean too much.

Krumm: Our answer would be no. Experience definitely has shown that on thousands of N.Y.A.B.C. daughters natural proofs seldom, if ever, repeat themselves for the reason that Fritz gave. They will repeat under identical conditions. They don't repeat because in A.I. they seldom are used in the same type of herds, or under the same conditions. That's the reason we feel that the A.I. proof is the only reliable measure of real genetic worth of a sire and that's the reason for our very extensive young analyzed sire program. We test all of them (young, analyzed sires) thoroughly in all kinds of herds and under all environmental conditions before returning the best of them to service.

Baldwin: I think the biggest failing of natural proof, or I like the term "one herd" proof better, is that it fails to rank the bulls. If you select 10 bulls, each originally proved in a different environment, the ranking you get from A.I. service tends to eliminate this variable, and allows a more accurate measure of their relative merit. *(Turn to page 1122)*

Flexible plastic milk pipelines will work

Whether or not they become generally acceptable will depend on the cooperation of the manufacturers and the willingness of the farmers to keep the equipment clean and sanitary.

DUMPING STATION and flexible pipeline has a lower initial cost, lower cleaning cost, and can be cleaned-in-place. Roll-along unit carries milking equipment from stall to stall.

by Myron P. Dean

AN IDEAL milking system is one that should make the job of milking pleasant, efficient, and at the same time do a satisfactory job of producing a high-quality milk without jeopardizing herd health.

Some of the factors that would be included in this ideal milking system are: Elimination of carrying and dumping milk, elimination of the back bending during milking, economical installation and maintenance, and the proper design to be cleaned-in-place satisfactorily.

There is much interest in pipeline milking because many of the above factors can be incorporated into one milking system.

Generally speaking, there are three types of pipeline milking systems now being used: Around-the-barn pipelines, milking parlors, and flexible plastic milk pipelines or portable milk conveyor systems. There are many variations of these pipeline milking systems.

The type of pipeline milking system selected will depend on the one that best fits into the present milking operation or future plans.

The around-the-barn pipeline and dump station-pipeline will be used with the stanchion barn. The around-the-barn system has the advantage of eliminating the carrying of milk as well as being cleaned-in-place.

However, the higher cost of installation, some difficulties in installation, additional cleaning costs, and back bending during milking are some of the disadvantages.

The milking parlor, of which there are several types, fits best with the loose housing of dairy cattle, although there are plans and operations now in use that have a milking parlor with a stanchion barn. With a milking parlor, herd size can be increased without additional costs, carrying of milk and back bending during milking are eliminated, and the system can be cleaned-in-place.

The disadvantages of the milking parlor are the additional cleaning costs and high initial cost of installation.

The flexible plastic milk pipeline probably will be used with stanchion barns. This system eliminates the carrying of milk, lowers cleaning cost, and can be cleaned-in-place.

Some disadvantages . . .

The flexible plastic milk pipeline does not, however, eliminate dumping and back bending during milking. Many questions concerning maintenance have not been fully answered and many regulatory agencies have not accepted this system.

When any new milk-handling equipment appears on the market, many questions are raised. Perhaps some of the questions should be answered prior to the time new equipment is offered for sale. Unfortunately, this is not always the case.

The flexible plastic milk pipeline is no exception to the rule. Many questions are being asked; some we can answer and some are still to be answered.

1. Will the regulatory agencies accept this system of pipeline milking?
2. Can the equipment be cleaned-in-place?
3. How long will the plastic pipeline last?

To answer the first question concerning the acceptance of this equipment by regulatory agencies, we must realize that new equipment is constantly coming on our dairy scene which does not carry the 3A symbol nor a letter from the United States Public Health Service indicating compliance with the recommendations of the Public Health Service Milk Ordinance and Code. Therefore, the regulatory agencies are put in a difficult situation when asked to approve such new equipment.

Realizing this, the Wisconsin Milk and Food Sanitarians' Association appointed a committee to evaluate new equipment which did not carry the 3A symbol or official approval from the U.S. Public Health Service. This committee doesn't supersede or replace the 3A Sanitary Standards Committee or recommendations of the U.S. Public Health Service.

The committee appointed by the Wisconsin Milk and Food Sanitarians studies a new piece of equipment for construction, ease of cleanability, and makes bacteriological studies. These studies are made on equipment in operation on the farm or in the dairy plant.

The "letter of opinion" . . .

After the study has been made, a letter of opinion is given to the manufacturer and all regulatory agencies in Wisconsin.

Because flexible plastic milk pipelines do not carry a 3A symbol or an official acceptance from the U. S. Public Health Service, the Wisconsin committee has studied and is studying several types of these systems. This committee has given several letters of opinion.

In most cases, the Wisconsin regulatory agencies are using these letters of opinion as their basis for accepting the pipelines.

During the studies of the flexible plastic milk pipelines, it was the opinion of the Wisconsin committee that most of the plastic milk pipelines that they studied could be cleaned-in-place satisfactorily, if the proper cleaning procedures were followed.

The question concerning the length of time the plastic pipeline will last before it has to be replaced is an important factor to consider because the cost of the M-34 tubing is about 70 cents per foot. Frequent changing of this tubing would be very expensive.

At the present time, there is one plastic pipeline which is being studied that has been in use over two years. Again, it is difficult to say how long the plastic tubing will last since the life of the tube is going to depend on proper cleaning and maintenance.

Several problems encountered . . .

During the studies of flexible plastic milk pipelines by the Wisconsin committee, several problems were encountered:

1. Inadequate cleaning instructions given.
2. Some parts of the equipment not constructed for suitable in-place cleaning.
3. Equipment that was difficult to disassemble for inspection.
4. Cleaning recommendations not being followed by the operator.
5. Improper storage of the equipment.
6. Equipment not available for proper storage of the plastic pipeline.
7. Plastic pipeline not properly drained.
8. Unsatisfactory pipeline connections.

In most cases, the above problems were corrected. However, it must be understood that some of these problems were caused by the operator not using the equipment properly, and not following instructions.

Some people say that the flexible plastic milk pipeline is here to stay. Preliminary results from the University of Illinois and the work done by the committee appointed by the Wisconsin Milk and Food Sanitarians' Association indicate that this system of pipeline milking is feasible. However, cooperation from the manufacturers and the willingness of farmers to keep the flexible plastic milk pipeline equipment in a satisfactory, sanitary condition will be a determining factor.

THE END

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It's time for a change in pricing milk

Today's consumer is protein-minded and fat-shy. Then let's price milk on basis of protein as well.

DAIRYING is a comparatively young industry dating back only about 100 years. We have made much progress in the production, handling, and processing of dairy products. It seems to me, however, that on the milk pricing front we are losing ground.

During the last half of the 19th century, when dairying began its industrial development, milk was milk if it was sweet. The housewife bought it by the gallon and on faith. Dairy products were made by guess and by golly with little knowledge of their nutritional composition.

The one criterion of the composition of quality of milk, which was easily recognizable was the amount of cream rising to the top.

It is well known that many people today are viewing fats with suspicion, regardless of whether such apprehensions are justified or not. Protein content is the talk of the day on the food front.

Milk is priced and regulated on the basis of fat. The fine proteins of milk are practically ignored in determining its value in the market. Are we missing the boat?

Federal milk order officials realize that fat is not the only determinant of the food quality of milk. While their price regulations still assign a definite value for each pound of fat, determined by test, they now commonly allow a lump sum as the value of the skim milk portion of the milk without regard to its actual content of protein, milk sugar, or other ingredients.

The ingredients of the milk serum or skim milk, however, vary materially with breeds, individuals within breeds, stage of lactation, the state of nutrition and health of the cow, age, season, and so forth. We found that the milk of individual cows in a Holstein herd, during one month's DHIA testing, varied from 7.5 per cent to 9.63 per cent in solids-not-fat (SNF) content, and from 2.35 per cent to 4.56 per cent in protein content.

Recently we tested four Holstein, four Jersey, and four Guernsey herds. The herd averages for per cent SNF ranged from 8.22 to 9.73, and the herd averages for per cent protein from 2.96 to 3.94. The per cent variations are much greater for the proteins than for the nonfat solids as a whole. As a matter of fact, the variations in the nonfat solids content are due mainly to the variations in the protein, since the variations in the other nonfat solids, such as lactose and minerals, are negligible.

Under these conditions, a system of paying a lump sum for the total of the nonfat solids in 100 pounds of milk assigns a different value per pound to the nonfat solids, and especially the proteins, in each sample of milk.

Furthermore, the price paid per pound for these valuable solids will, unfortunately, always be lowest to the shipper of milk highest in protein and nonfat solids.

The man who ships milk low in protein and nonfat solids will receive the **higher price** for these nutrients. If he waters his milk and is not caught, he will receive the highest price of all.

Some of these relationships are shown in Table 1 for various shipments of herd milk carefully analyzed in our laboratory.

We found the percentage of nonfat solids in herd milk samples may vary by 20 per cent and those for protein by 50 per cent. Our protein-conscious consumers certainly would discriminate also against low-protein milk, if low-protein content were as easily detected as low-fat content. And, to a considerable extent, consumers are able to recognize low-solids milk because of its watery appearance and less pleasing taste.

Recent taste panel experiments conducted by us definitely indicated this and showed that consumers actually prefer milk reinforced with nonfat solids at the expense of fat. Thus, **milk containing 2 per cent fat and 11 per cent nonfat solids was definitely preferred to milk of 4 per cent fat and 9 per cent nonfat solids.**

As a matter of fact, at each of three total solids levels; namely 12 per cent, 13 per cent, and 14 per cent, the milks containing 2 per cent or 3 per cent were preferred to the 4 per cent fat milk.

It seems, therefore, that it is well for the dairyman to de-emphasize the fat content and promote the protein content of milk.

The percentage of protein in milk is a heritable factor, just like fat percentage. Breeding for increased protein percentage in milk, of course, will be a slow process but should be, and is, given serious consideration at the present time.

Certainly we should not discourage the producer of high-protein milk by a pricing system which pays him less per pound protein than the producer of low-protein milk. In fairness to the consumer as well as the producer, the amount of the nonfat solids, and preferably of the protein, should be determined in milk by test and assigned a definite and uniform unit value, just as is done in the case of butterfat. Suitable tests are available now for both nonfat solids and for proteins and should be put to use at once.

Testing milk for protein content is very important for manufacturers of cheese, especially cottage cheese, which *(Turn to page 1100)*

Table 1. Different prices paid per pound nonfat solids for different herd milks under the same base price per cwt. of 4% milk ($5.40) and fat point differential (8c).

Breed*	% fat	% SNF	% protein	c/lb. skim [1]	c/lb. fat [2]	c/lb. SNF [3]	c/lb. protein [4]
J	6.15	9.73	3.94	2.2	82.2	21.22	52.40
J	5.7	9.42	4.35	2.2	82.2	22.02	47.69
J	4.51	9.25	3.61	2.2	82.2	22.71	58.19
G	5.2	9.03	3.63	2.2	82.2	23.10	57.45
G	4.62	8.81	3.30	2.2	82.2	23.82	63.59
H	3.86	8.7	3.23	2.2	82.2	24.31	65.48
H	3.4	8.18	2.85	2.2	82.2	25.98	74.57
W	2.83	6.82	2.37	2.2	82.2	31.35	90.20

* J, Jersey; G, Guernsey; H, Holstein; W, previous sample + 20% water.

[1] With the given base price and point differential, milk of 0% fat, or skim milk would be valued at $5.40 − 40 × .08 or $5.40 − 3.20 = $2.20 per cwt. or 2.2c per pound.

[2] In 100 pounds 4% milk there are 96 pounds skim milk at 2.2c worth 96 × 2.2c = $2.112, leaving $5.40 − $2.112 = $3.288 as value of 4 pounds fat, or 82.2c per pound fat.

[3] $\frac{\text{\#skim milk} \times 2.2}{\text{\#SNF}}$; For sample No. 1: $\frac{93.85 \times 2.2}{9.73} = 21.22c$.

[4] $\frac{\text{\#skim milk} \times 2.2}{\text{\#protein}}$ (entire value of skim milk assigned to the protein). For sample No. 1: $\frac{93.85 \times 2.2}{3.94} = 52.4c$.

Table 2. Relative prices received for milk from different breeds under pricing systems.

Breed	Typical pounds of					
	Milk	Fat	Protein	SNF	F + prot.	Fat + SNF
H	100	3.7	3.2	8.5	6.9	12.2
G	100	4.9	3.5	9.0	8.4	13.9
J	100	5.4	3.9	9.4	9.3	14.8

Base* price per cwt.		Relative prices under various paying plans (Holstein prices constant)						
		$1.39 per lb. fat	$1.61 per lb. protein	61c per lb. SNF	75c per lb. F+prot.	42c per lb. F+SNF	38c fat+ $1.27 prot.	60c F+ 35c SNF
H	$5.16	5.14	5.15	5.18	5.17	5.12	5.17	5.19
G	6.12	6.81	5.63	5.49	6.30	5.84	5.92	6.09
J	6.52	7.51	6.28	5.73	6.97	6.22	6.57	6.53

*$5.40 per cwt. of 4% milk with 8-cent fat point differential.

Don't "assume" so much!

Who's going to pay more for milk protein?

Even at current prices, we have three times the surplus of skim powder that we have of butterfat.

C. E. FRENCH, the author, is assistant head of the agricultural economics department, Purdue.

DAIRYMEN are justifiably concerned. They seek opportunities to improve their service to the public and, in return, improve their price and income position. Many seek that improvement by altering the values . . . or prices . . . of butterfat and skim milk powder.

Such thought is expected and commended. It is disturbing to note a 20 per cent drop in per capita dairy consumption over the past two decades. A government price support program, struggling with a 5 per cent surplus for a decade and now faltering even more, draws questions about the prices set.

The fat situation is bad. In time, facts may vindicate fat in the eyes of researchers but consumers are impatient. An industry so heavily committed to fat as a basis for price must question itself.

The fluid milk industry is relatively new and grew out of the manufacturing industry. Vestiges from manufacturing have carried over. Time properly questions them. Formulators of federal milk marketing orders drew heavily on dairy technology to establish economic relationships. Orders have changed, and vestiges of antiquated dairy technology here should be questioned.

The case for change . . .

Many techniques can be proposed for shifting value between fat and skim. But assumptions and logic, not techniques, are our subjects here.

Most proponents of nutritional-value-pricing start by assuming that consumers will buy fortified skim milk in place of whole milk with little or no drop in price per unit of volume. Thus, more nonfat milk can be sold at much higher prices. Excess fat can then move at prices much lower than now.

It is further assumed that fluid milk consumption will hold and possibly increase because this new product would be easier to sell.

In addition, it is projected that butter sales will go up materially because of a lower price for fat and improved quality.

Government surplus would be eliminated.

Manufacturers of dairy products could pay a more realistic price for fat and powder . . . and would get a more dependable quality.

Farmers would be treated fairly and would alter the fat content of milk produced in line with health recommendations and lower fat diets. Prices to farmers would be the same or higher.

Some problems . . .

Such goals are laudable but the means of securing them are grossly oversimplified.

It is an important . . . and bold . . . assumption that large amounts of fortified skim milk will replace whole milk. Skim has been available at low cost for years. The trade has had an opportunity to substitute skim for fat and harvest important profit gains.

Admittedly, unfortunate selling habits of emphasizing butterfat and laws prohibiting standardization deter this some. But the profit incentive to substitute low-cost skim for high-cost normal fat milk, at the same selling price, is strong enough that skim sales should have moved much faster if the problem were so simple.

DAIRY DEBATE

The milk pricing proposal advanced by the able dairy scientist, H. A. Bendixen (opposite page) reflects the thinking of many dairy research workers. It has intrigued the dairy cattle breeding world. While we might highly desire this simplified solution to the dairy income and surplus problem, Hoard's Dairyman has viewed such approaches with economic doubt. Nutritional **value** and market **price** are not synonymous, though perhaps desirable. To analyze the Bendixen proposal, we asked Dr. French, a nationally respected dairy economist, for his commentary, which is presented here. —The Editors

In 1960, fluid nonfat and low-fat milk consumption per capita was estimated by the National Dairy Council at only 15 quarts, 11 per cent of fluid milk consumption. Moreover, this figure has been essentially unchanged for the last 10 years and is 10 per cent below the 1947-49 average and down one-third since 1935-39.

Some recent increases are reflected in the fluid items sold in federal order markets. Such items in 65 order markets showed a 10 per cent increase in the first quarter of 1961 over 1960. These items are the strictly fluid ones and do not include ones such as buttermilk and certain flavored drinks. Also, farm consumption of fluid items is down markedly.

Many economic problems could be solved if we could ignore either consumer demand or cost in setting prices. But, both come in.

Typically, we try to establish our prices in line with values established **in the open market.** In this arena, demand considerations have put a low value on skim and a high value on fat. Consumer changes are shifting these values some over time, but **a simple decree to alter these fundamental economic relationships is an idle gesture without the fundamental economic changes to back it up.**

We admit that our U. S. economy is moving into more administered prices, either by government decree or monopoly power. Prices tend to be frozen. But, in either case, the relationship between product demand and product supplied must be considered. To set arbitrarily a price ratio between fat and skim means that the supply of the two components must be controlled. The dairy industry does **not** have the power to do that with current production and processing practices.

Typically, in a joint-product relationship such as this, demand factors establish the economic value in a more direct manner than does cost of production. This is a practical matter. Demands for the individual parts are reflected against supply for the two products jointly.

Obviously, the values and prices of individual components are thus somewhat indirect and often incidental to farmers' decisions to produce milk. Admittedly, government administration, such as under federal milk orders, can alter these values but it **cannot materially go against basic supply-demand concepts without fundamental changes in current laws.**

We hear much about use of protein pricing of milk in Holland. My understanding is that Dutch payments account for about 23 per cent of total price on a protein basis and the remainder on a fat basis. Most pricing plans in this country would not be too far out of line with this. Thus, the Dutch movement apparently has recognized practicality.

A better price for nonfat may be possible, particularly if we can sell more at the higher price gained by substituting fortified skim for whole milk. Unfortunately, a large proportion of our dairy industry would not share in these higher returns for skim, but **would suffer from the much lower price for fat.**

What is proposed, of course, is a two-price system for skim — high skim prices in fluid milk and lower, competitive prices in present nonfat powder outlets. This is not realistic!

Good skim or nonfat powder is available to everyone at the **same** market prices. **How can two prices be enforced under current industry practices?**

Neither does a two-price plan for butterfat appear feasible. We have not seen, nor can we conceive of, a workable plan short of industry or government monopoly power.

Lacking such a monopoly, consider the effect of dropping butter prices 50 per cent! It isn't just the butter made from the fat taken out of fluid milk. About 25 per cent of the **present** national milk supply goes into butter. These prices would be slashed in half, too! The effect on dairy farm income would be disastrous.

A much higher price for skim would certainly reduce substantially the sale of conventional skim items, such as skim powder for baking, and so forth. Most studies show that sales of skim milk, both in the fluid form and in the dry form, respond quickly to price changes.

We have doubled our per capita powder use since World War II. But price has figured heavily in this. It is well known that bakers, for example, stand ready to substitute for powder if the price of powder gets out of line. Also, some studies suggest that an increase of 10 per cent in price of low fat fluid will drop the sales of the product as much as 20 to 40 per cent.

To boost dairy farm *(Turn to page 1100)*

It's time for a change in pricing milk

(Continued from page 1098)

is purely a protein food. For cottage cheese manufacturers a low-protein milk not only costs more per pound of protein received under today's pricing systems but, in addition, it reduces his yield of cheese, may cause him serious coagulation and processing difficulties, increased labor costs, and a lower quality product.

Manufacturers of Swiss cheese and various foreign-type cheeses offered on the market in quality classes of 30, 35, 40, 45, 50, and 60 per cent fat in the dry matter must also know the protein content of the milk used and standardize the ratio of fat to protein.

Breed people, of course, will be interested to know how the testing for protein or nonfat solids would affect the relative prices received for different types of milk, such as Holstein, Jersey, and Guernsey milk. Table 2 shows the relationship of these payments.

The percentages of fat used in the table are the approximate average lactation percentages recorded for all state of Washington cows on DHIA test in 1957. The percentages of protein and nonfat solids are the average tests found by analysis at Washington State University for large numbers of samples of milk from cows of these breeds.

The systems of payment shown were calculated so that prices for the Holstein milk would be the same in each case and in harmony with a base price of $5.40 per 100 pounds of 4 per cent milk and a fat point differential of 8 cents.

Assuming that the present method of using the base price plus a fat differential system of paying is fair to all breed people, Table 2 indicates that:

- paying on the basis of fat alone or on a fat-plus-protein basis alone would favor producers of Guernsey and Jersey milk.
- paying on the basis of protein, or solids-not-fat, or fat plus solids-not-fat (total solids) would reduce returns to Guernsey and Jersey producers in comparison to Holstein.

Fair prices for breeds . . .

It is, however, possible to pay separate prices for fat and protein, or for fat and solids-not-fat which will pay each breed man approximately the same price per 100 pounds of milk as the base price plus fat point differential.

Compared with a base price of $5.40 per 100 pounds of 4 per cent milk and a fat point differential of 8 cents, the milk of each breed would return the same amount of money, if the fat were priced at 30 cents per pound and the protein at $1.27 per pound.

Equal returns would also result if the fat were priced at 60 cents per pound and the nonfat solids at 35 cents per pound.

Since consumers today are as much, or more, interested in the proteins in milk as in the fat, regulations should permit market milk to be standardized to the composition preferred in the market.

Let us see what would happen if milk plants were permitted to standardize their milk for fat and protein content. Such a standardization is accomplished by removing a small amount of cream and adding a small amount of skim milk powder or plain condensed milk.

[The author, in his original manuscript, made available many voluminous tables. We regret that space does not permit their reproduction. Interested readers may obtain copies of these tables from Hoard's Dairyman. To conserve space, we summarize his points as follows:

1. Milk can be standardized to 2 per cent fat and 4.2 per cent protein, or 3 per cent fat and 4.2 per cent protein.

2. Standardization is accomplished by separating off cream and adding nonfat solids or plain condensed milk.

3. If 2 per cent fat, farmer would receive the same milk price as today if fat price were dropped to 37 cents and protein boosted to 58 cents (about 21½ cents for skim powder).

4. Butter price would be as low as 30 to 35 cents per pound, making possible a "doubling" of consumption. There would be "no surplus" of skim powder.

—The Editors]

Eleven advantages . . .

Thus, summarizing the values of paying for milk on the basis of fat and nonfat solids or, preferably, protein, it appears:

1. Milk producers, regardless of the breed of cows kept, can be paid the same or higher prices as under present systems of paying.

2. Producers would be paid equitably on the basis of the total composition of their milk.

3. Producers would be rewarded for intelligent feeding and herd management practices.

4. Breeders would be encouraged to breed for high protein content in milk.

5. Consumers would receive a milk more in line with their taste preferences.

6. From the health point of view, market milk would be higher in protein and probably higher in total nutritional value.

7. Selling milk on the fat and protein basis rather than on the fat basis would have a greater appeal for consumers and give the dairyman a new and stronger sales pitch, which should result in greatly increased sales of milk.

8. Nonfat milk solids would be used for standardizing the milk, which would eliminate or reduce our surplus stocks of these products.

9. Sweet cream butterfat would become available at very low prices. These reduced prices would tremendously stimulate the sale of butter.

10. The ice cream industry and others using butterfat would be aided.

11. The manufacturers of cottage cheese and other cheeses would have a more dependable raw material to work with, resulting in fewer processing difficulties, reduced costs, and improved products.

It seems, therefore, the time has come for a change in evaluating milk according to its nutritive quality. Fat percentage alone no longer has the sales appeal it used to have. The consumer today is protein-minded and fat-shy. Milk is one of the finest protein foods known. Practical tests for protein have been developed. Why not change our sales pitch to be in tune with the times?

By promoting its proteins, the dairy industry may well eliminate its surpluses and regain new life in all its branches, since all will be benefited . . . producers, processors, cheese manufacturers, ice cream manufacturers, creamerymen, and all. It's time for a change.

THE END

Don't "assume" so much!

(Continued from page 1099)

income, we should sort out dairy products according to how sales respond to changes in price. If consumers buy about the same amount of bottled milk, regardless of price, we say sales are "relatively unresponsive" to price. On the other hand, if skim powder sales go up with a price drop and down with a price boost, we say skim is price "responsive."

We must be very careful, then, in evaluating proposals to alter prices. It is dangerous to boost prices of responsive items because we lose so much in sales. But there may be real price and profit gains in creating a short supply of an unresponsive item.

To push up prices of skim items while pulling down those of fat goes in the opposite direction. Typically, we have thought that butter consumption was quite responsive to price changes. But this may be changing with our hard core of butter users. Current buyers may be quite unresponsive to price. Thus, Professor Bendixen's general proposal has some aspects which will give effects directly opposite to those desired.

To hope to move the present surplus of nonfat in fortified skim is ambitious, and recent experience casts doubt on its feasibility. The loss of conventional markets to skim would be damaging. Moreover, the manufacturing milk interests cannot live with this very low price for butter.

Such a thing would be quite infeasible. The magnitude of the existing imbalance is illustrated well by the fact that recently the percentage of nonfat bought by the government is three times that of fat. The government bought 46 per cent of the powder in 1960. The percentage of butterfat bought was the lowest since 1951.

Thoughts for the future . . .

A re-evaluation of milk pricing is not simple. The industry must consider many facets.

1. **New and improved products.** Some concepts of standardization are out-of-date. It will pay to develop aggressively new and improved nonfat products. Certain butterfat folklore has become too expensive. The industry should lead in such innovation and not wait for economic decree. Dietary concepts in food should be used to advantage, not ignored as something that will go away.

2. **Improve pricing innovation.** Certain outdated provisions of federal orders need changes. For example, price formulas that are out of line with yield values obtained with modern processing technology should be changed. Holland has recognized protein values. Canada, England, and France are studying the problem. Demand changes may be slowly reflected in some pricing plans. This should be corrected. Chain stores have illustrated forcefully the strength of widely-varying margins among products in giving maximum over-all returns. Is this a lesson for the dairy trade? Some innovation with differential margins will occur in dairying.

3. **Merchandise protein.** Protein emphasis is good merchandising today. People are probably not as conscious of food components as of general satisfaction; however, protein fits their desires and is underused in dairy merchandising.

But be realistic. Milk gets about one-fourth of the food protein market now. Other foods will give her more with reluctance.

Opportunities exist to reduce costs of nonfat products, particularly cottage cheese. These processes grew "like Topsy." Cost economies are possible. Lower cost is a traditional, but unexcelled, method of selling more product.

4. **Pay for protein content.** Attempts to get more total milk income in the future must be separated from our attempts to better allocate the present milk income when evaluation is discussed. The first is not exclusively a producer problem; the latter essentially is.

Insofar as pricing plans do not reflect differences in protein values, this seems to be poor economics. Availability of efficient testing methods suggests that we should differentiate between milks with different protein contents. To some extent, such differences in protein represent products with different consumer values. This needs more exploration. Nonfat pricing plans are in use in some areas now, notably Wisconsin.

5. **Know your products.** We must improve our focus on different dairy product elasticities. Research is needed in this area. This is a fundamental lesson in economics — so fundamental for dairymen that they can no longer refuse to learn it. Products highly responsive to price must be pushed in volume with a sensitive hand on price.

Those not so responsive will stand some price increases. It will pay to adopt methods of restricting the volume of such products thrown on the market.

6. **Ease off on fat.** The sharp focus on fat is probably not necessary and the industry should ease away from it. This will be gradual. It is prudent to challenge inequities growing out of vested interests. Yet, creation of new vested interests is a continual process. Equity points of view are often colored by whose "ox is gored."

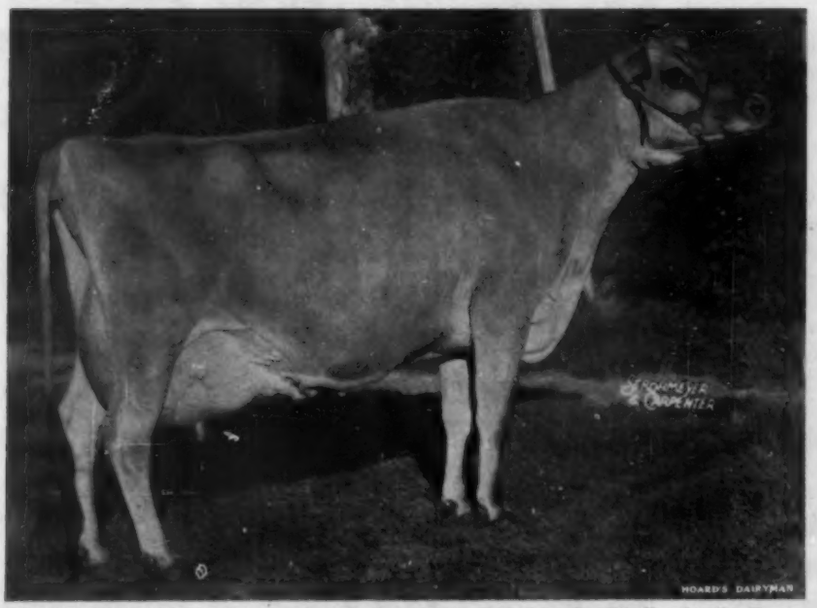
Each new program must be subjected to the tests of reasonable equity considerations. Change for the sake of change is not progress. Trends must be used to advantage. Adjustments are continual and should be pushed along. But marketing developments are generally evolutionary, not revolutionary. The rate of change is a sensitive thing in an industry as highly administered as this one.

Farmers over the country have dropped, on the average, the butterfat content of milk from 3.96 per cent in 1950 to 3.76 in 1960. The use of milk fat per person has dropped 12 per cent in 10 years; nonfat use went up 4.4 per cent.

7. **Balance supply and demand.** The basic supply and demand balance is a long-run consideration affecting the entire dairy industry. Differences pale and similarities brighten in this industry. Interrelationships multiply. Total industry approaches to creating economic health through balanced supply and demand will prevail. Obviously, friction is created during the change. But progress is always accompanied by friction. Only a stagnant, static, or decaying industry is free of friction.

To achieve the goals we all desire in dairying, we must keep a broad perspective. See the entire problem, not just little pieces of it, if you would contribute to the long-range solution. **THE END**

All American Jersey Show
is quality show of 1961



Mayfield Farms repeats as Premier Breeder with Heaven Hill Premier Exhibitor. Texas has both champions; 297 head shown in senior show; Ohio wins both the futurity classes.

MIKE'S DRACONIS ROSE, grand champion female, owned by Joe Knolle, Sandia, Texas.

MANY veteran observers called the 1961 All American Jersey Show at Columbus, Ohio, the greatest quality dairy cattle show ever held. Numbers were down to 297 from the more than 400 shown last year, but quality ran deeper than in any show we have reported previously. More than 100 exhibitors from 18 states and Canada made it truly a national show.

For the second consecutive year, Dr. John McKitrick, Dublin, Ohio, tied the ribbons. His confidence, interesting ring procedure, and convincing manner of giving reasons added much to the "color" of this fine show.

Prior to the Senior Show, All American activities included an outstanding Junior Show, Calf Scramble, Pot O'Gold Sale, Jersey Jug classes, and the All American Jersey Sale. Items pertaining to these events are reported on page 1117.

Grand champion female was the winning aged cow, Mike's Draconis Rose, shown this year by 15-year-old Joe Knolle, Sandia, Texas. This is the same cow that placed third in last year's All American due largely to the fact she was on the verge of calving and obviously not showing at her best.

Having been named champion of the Junior Show just four days earlier, she showed the effects of rigorous preparations twice in a short period of time and it wouldn't have been too surprising had she failed for her bid for top honors. However, Judge McKitrick complimented "Rose" on her tremendous frame, wonderful topline, and great body capacity in naming her the grand champion.

Reserve grand champion was the second prize aged cow, Brampton Gareth Carom, shown by Henry Uihlein, Heaven Hill Farm, Lake Placid Club, N.Y. While not as nice in shoulders, loin, or hind legs as the winner, she had more scale, more depth and length of rib, and was a bit cleaner throughout than Jester Volunteer Dreamer Joyce, shown by Chester Folck and Sons, Springfield, Ohio, in third.

The latter, just fresh 10 days, was wider in the chest than an entry owned by Hap Young and Sons, Yellow Springs, Ohio, that placed fourth. There were 24 aged cows shown, and McKitrick called it the easiest class in the entire show to judge. For his best udder awards in the aged cow class, he went to his sixth and seventh prize cows. Best uddered cow was Beacon Bas Belle, shown by Mayfield Farms, Athens, Tenn., while second best udder ribbon went to Hyfields W. R. Marta, shown by Davis Brothers, Caldwell, Texas.

Waited until milkout . . .

There was more than the usual amount of suspense in the 4-year-old cow class with some very close placings, particularly in the top four. Included was last year's champion cow, Beacon Bas Tulip, shown by Elaine Mayfield, Athens, Tenn. (reserve grand champion of this year's Junior Show).

McKitrick made an unprecedented move in that ribbons on the top pair were not awarded until all of the first and second prize winners were brought into the ring for the decision on champions, which was preceded by a milkout.

Winning 4-year-old was Belle Beacon Gem Sylvia, shown by Mrs. Edwin Gamble, Harrodsburg, Ky. (grand champion at the 1961 Dairy Cattle Congress); while in second was Beacon A. C. Gem, shown by R. W. Hallstrom, Keene, Va. Elaine Mayfield's "Tulip" placed third and a Heaven Hill entry, Advancer Tenellena, was fourth.

The winning 4-year-old had a bit more style, was cleaner about the neck, and had an advantage in udder following the milkout over the second prize winner. The latter was smoother behind the shoulders, a bit straighter in her hind legs, and stood on stronger rear pasterns than last year's champion, although Tulip was a little sharper throughout than she was a year ago.

The best udder awards went to two entries by Don Head Farms, Ltd., Richmond Hill, Ontario, Can., that placed fifth and sixth in the 4-year-old class. The sixth place winner, Don Head Belleson Jewel, was purchased in the All American Sale by Four Winds Farms, Delavan, Wis., two days earlier for $1,500.

Last year's winning 2-year-old, Golden Etta Jester Scotty, shown by Pioneer Farm, Old Lyme, Conn., came back to head a strong 3-year-old class. Also receiving the second best udder award, she had a higher, wider rear udder, was more upstanding, and had more depth of ribbing than the smoother rumped cow in second, Marlu Milestone Jester Nina.

Consigned to the All American Sale by Shadyrest Jerseys, West Liberty, Iowa, "Nina" was purchased by The School of the Ozarks, Point Lookout, Mo., for $1,800. Earlier in the week, she placed second in the 3-year-old Jersey Jug Futurity.

Third prize 3-year-old was the winner in the Junior Show, Beacon Bas Sylvia, shown by Charles Mayfield, Jr., Athens, Tenn. Best udder award went to another Mayfield entry, Beacon Bas Doris, that placed fourth.

The Futurity winner, Golden Etta Beauty, shown by Myers Jersey Farm, Troy, Ohio, did not show near the bloom of udder or body she had earlier, and was dropped to seventh.

Another winner comes back . . .

In a rather difficult class to line up, but one of the best in quality of the entire show, last year's winning senior yearling in milk came back to top the 2-year-old class. She was Maraview Sleeping Beauty, shown by R. D. Shipman, Shelbyville, Ky. Fresh just a month, she had more bloom to her udder, was smoother over her topline and rump than Liberator's Ruby, shown by Max and Steve Bachelor, Angola, Ind. This pair won first and second, respectively, on udders.

A very upstanding Heaven Hill entry that was a little too mature in her udder placed third, while in a close placing, Valiant Plume Lady, shown by Oak Hill Farm, Cambridge, Ohio, placed over Gil-Bar Bijoux Radar Lana, purchased by Heaven Hill Farm just prior to the show. The former had an advantage in space between rear teats and was a bit cleaner than the very nice-bodied heifer in fifth, that many thought *(Continued on next page)*

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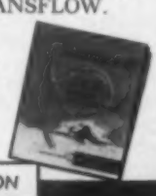

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1873-A

(Continued from preceding page)

would be a contender for first.

Advancer Pet Peppi, shown by Paul McCarthy, Lyndon, Ky., was an outstanding top in the class for senior yearlings in milk. Also the best udder winner, she was beautiful over the top and loin, and had more depth and balance of body than Beacon Bas Astor Lily, shown by Dr. L. O. Crumpler, Danville, Va., in second. Second best udder winner was an entry owned by Myers Jersey Farm that placed fourth in the class.

Tenhouse has junior champion . .

Junior champion female and first prize senior yearling was Itaska's Merry-Thought, shown by Earl Tenhouse, Liberty, Ill. While she did not have as much heart and scale as Y-Brook Noble Dora, shown by Russell Hoar, Newark, Ohio, in second, she was cleaner in the throat, sharper over the shoulders, and had a little more udder promise. The second heifer, springing heavily, was a large, powerful heifer with a lot of body capacity. A Mayfield entry, moved into third from down the line, had what McKitrick called "The kind of frame I like."

Reserve junior champion was the first prize junior yearling, Morocco's Basilua Jester, shown by A. J. Keightley, Harrodsburg, Ky. A tremendous-sized heifer combined with a lot of smoothness and balance, she had more rib, was stronger in the loin, and straighter on her rear legs than her paternal sister, Esther Design Jester, shown by John Weidemann, Franklin, Ky. (junior champion of the junior show). The winner is undefeated this fall.

In a tough class to line up, the winning heifer calf was Ninette's First Lady, shown by Dennis Leamon, Riceville, Tenn. Also winner in the junior show, she placed over Jester's Bijoux Kitty, shown by Diana Moore, Newark, Ohio, on her size, strength, depth of rib, and body. Second and third made a very close placing, the Moore entry being cleaner about her front end and longer in the neck, although a heifer shown by William House, Camden, Ohio, was conceded a flatter rump and smoother tail head.

Aged bulls colorful . . .

One of the most colorful classes of the entire show was the good aged bull class in which 13 were shown. After a terrific showmanship contest between Tom Rucker, Blair Folck, and Orval Siegenthaler, the Texas bull, Mariu Royal Supreme, owned by V. L. Stout, Rhome, won over last year's grand champion, Chief's Son of Pat, owned by Folck.

In McKitrick's words, "I've never tried any harder to line a class up right. I'd like more masculinity about the winner's head, would clean him up in the throat a bit, then I'd be through with him. He suits me very well."

He defeated the former champion for having a little more balance throughout, for being smoother in his shoulders, and cleaner about his hind legs. The second bull didn't move quite as well on his front legs.

The third prize bull, Dandy Sadie Lord Clair, shown by Ayers and Siegenthaler, Fort Smith, Ark., had a tremendous amount of breed character, but needed more depth of heart and rear flank.

The first and second prize bulls were grand and reserve grand champions, respectively.

First prize 2-year-old bull was Madam Etta's Combination, last year's winning senior yearling, shown by Mykrantz Brothers, Wooster, and Buck Run Jersey Farm, Burlington, Ohio. A bull with tremendous length of body and good legs, but a little easy in his loin, he placed over the smooth Pat's Son of Radar, shown by R. C. and R. B. Bailey, Spring Valley, Ohio.

Junior and reserve junior champion bulls were the first and second prize senior yearlings. The winner was Advancer Radar Tom, shown by Hallstrom, in a very close placing. Last year's winning bull calf and reserve junior champion bull, he had more scale, was more upstanding, and a bit deeper in fore and rear rib than Bindle's Commando, shown by Heaven Hill, that was smoother over the top and rump.

The junior yearling bull class saw another close placing. Itaska's Fillpail Keeper, shown by Earl Tenhouse; placed over U Conn Dreaming Oxford, shown by the University of Connecticut, for being more upstanding, more open in his ribbing, and a little nicer on his rear legs. The second bull was nicer about his head, stronger over the loin, and smoother through the rump.

Wilmington Wonder, shown by Wilmington College, Wilmington, Ohio, was an outstanding top in the bull calf class. A calf with a lot of size and constitution, he had more width and depth of body and was straighter on his hind legs than the sharp, cleancut entry by H. F. Hupman and Keifer Brothers, Springfield, Ohio, in second.

Sired 1st and 2nd Gets . . .

The junior get of sire class was one of the most interesting of the entire show. Both the first and second prize gets were the Get of Advancer Sleeping Jester, the winner owned by Kentucky Jerseys, Carrollton, Ky.; and the second prize winner by A. J. Keightley, also of Carrollton.

Mayfield pretty well swept the mature group classes, having the first prize senior get on the Get of M. F. Lindale Beacon Bas, as well as the winning dairy herd and best 3 females. First prize produce of dam was the Produce of Pinnacle Jester Basil Joy, shown by Folck. Mayfield was Premier Breeder while Heaven Hill was Premier Exhibitor.

There were 11 state herds, the winner was Kentucky, followed by Texas, Tennessee, Ohio, Indiana, Connecticut, Alabama, Missouri, New York, Pennsylvania, Maryland.

THE END

Sale averages $1,634

Ambassador, a 5-year-old bull consigned by Knolle Jersey Farms, Sandia, Tex., sold for $20,500 to top the 1961 All American Jersey Sale held at Columbus, Ohio, October 16. Purchased by the Central Ohio Breeding Association, Columbus, Ohio, contending bidder was Tri-State Breeders, Westby, and Badger Breeders, Shawano, Wis.

The 38 head sold for a total of $62,075, for an average of $1,634.

Chester Folck and Sons managed the sale.

Following is a list of those animals that sold for $1,500 or more and the buyers' names:

Central Ohio Breeding Association	
Ambassador	$20,500
Four Winds Farm, G. Borg, Wis.	
Jester Etta Star	3,200
Commando Jim Etta	2,500
Jester Draconis Noble Star	2,400
Don Head Belleson Jewel	1,500
Dean Workman, Minnesota	
Mariu Milestone Spring	2,750
Pioneer Farm, Connecticut	
Clarendon Itaska Puff	2,000
Mrs. T. H. Carruthers, Ohio	
Jester Draconis Sweet Star	1,800
School of the Ozarks, Missouri	
Mariu Milestone Jester Nina	1,800
Mariu Farm, New Jersey	
Sensation Nanette	1,500

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Here are the results:

	Cows fed high efficiency ration	Cows fed 16% milking ration	Difference
Previous lactation (all cows on reg. 16% milking ration)	14,891	14,024	867
Test year	16,958	13,899	3,059
Difference in lactations	+ 2,067	— 125	+2,192

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EDITORIAL COMMENT

W. D. HOARD FOUNDER

OUR FOOD RESERVE CAN PREVENT A NUCLEAR WAR

OF CURRENT concern to every American, rural and urban alike, is the prospect of a nuclear war. There is widespread uneasiness in all walks of life. It is our belief, however, that the United States has a strategic weapon that is a greater deterrent to war than many of us, including our government leaders, appreciate. This is our food reserve, through which we have the capacity to survive following a nuclear war.

Let's look at the situation from a cold and unemotional point of view.

The so-called farm surplus which plagues us includes enough wheat to feed us for a year and perhaps two years. Contrast this with the food situation in Russia and Red China. Here are two quotations:

"Mao (Mao Tse-Tung of Red China) is clearly in serious trouble. He has had three bad harvests in as many years. There is famine in many parts of mainland China." —Life magazine

"The Soviet Union has disclosed a virtual crop failure in Kazakhstan and the Virgin Lands. Last year [they] also had a disastrous harvest. The development of the Virgin Lands is a pet project of Premier Khrushchev, who sees those vast reaches of Central Asia as a means of overtaking the United States in food production. On the international front, the Soviet Union almost always lowers its demands when there is a bad harvest since, unlike the United States, it has no reserves on which to fall back." —Washington Star

Assume there were a nuclear war. Devastation, obviously, would be great on both sides. But look beyond, and there would be a beyond. Who will have the strength to survive and rebuild? Certainly the United States would be in a far more advantageous position. In fact, our enemies would be foolish (and they may be) to start a nuclear war. Their prospects of winning the competition for survival are infinitesimal compared to ours.

Our point here, however, is that our present reserve of food is practically useless because our government has not yet shown the foresight to locate these food reserves so the population can make vital use of them in the event of the national emergency which we fear. The Department of Agriculture has pushed for a sensible relocation of our surplus wheat. But other agencies of government and the Congress have been more interested in being the first on the moon.

LAKE TO LAKE IS FIRST

FOR the first time in history, authorization has been granted to a dairy plant to use the U.S.D.A. Grade AA mark on the label of its consumer packages of Cheddar cheese. The honor went to the Lake to Lake Dairy Cooperative, Inc., of Manitowoc, Wis.

This achievement merits the commendation of the entire dairy industry. It was the result of a prolonged period of quality performance, three years of demonstrated capability to produce and market a truly superior cheese.

It is one thing, of course, to produce cheese which merits the AA grade. It is quite another thing to do it consistently over a long period of time. The fact that the Wisconsin cooperative is the first to be granted the label indicates the merit of the achievement.

76 years ago...

It is as absurd for a farmer to be stubbing along and not know what kind of a cow he is feeding — and he judging her by sleek looks or volume of so-called milk — as it is to sell wheat by guess, without measuring or weighing.

W. A. Hoard

DIRECT PAYMENTS— IRON FIST IN SOFT GLOVE

WITH a competent public relations firm to extend his volume, Robert Liebenow, president of the Chicago Board of Trade, has added his voice to the growing chorus for direct government payments for farmers.

It is intriguing to run down the list of proponents of direct payments today. Eleven years ago, only Secretary of Agriculture Brannan seemed to carry the torch for the direct government check subsidy to farmers. Now the cause is taken up by processors and others between the farmer and the consumer.

But what is really surprising is the naivety (we hope) of those in the new singing group. For example, Liebenow blasts "those who follow the supply management theory" and plugs for a "free market," one without export subsidy. We don't like export subsidy either. That's why we have long advocated the two-price or domestic parity program. But let's look at supply management and free market.

On April 7, 1949, Secretary Brannan testified before Congress on direct payments:

"Eligibility of a producer for participation in the benefits of any price support program should be **conditioned upon compliance with or adoption of applicable programs of production adjustment, marketing quotas or agreements . . .**"

Does this sound like a free market? Is this what Liebenow and his dairy processor sympathizers want for the American farmer? If so, then why don't they say so in a straightforward manner? Let's see the fine print in this bargain-basement farm program package.

If they don't want controls, then who is going to pick up the fantastic price tag on this "easy" solution to the farm income problem? Though we strenuously opposed Secretary Brannan's proposal 11 years ago, and do now, we credit him with the realism and honesty to admit that production controls go hand-in-glove with direct payments.

FREEMAN'S HARD DECISIONS

IF THERE ever was a honeymoon for Secretary of Agriculture Freeman in his new post, it is pretty well over now. The dilemma of the Secretary is exemplified by what has taken place in dairying.

Facing huge inventories of wheat and feed grains which hung ominously and depressingly over the market, Freeman asked for and squeaked through Congress a feed-grains program. It contained a carrot of higher prices for those who cut back acreage. Though there was a heavy sign-up, excellent growing weather and farm ingenuity reduced the effectiveness of the program.

To offset the effect of possible higher feed-grain prices, the Secretary boosted dairy price supports from $3.22 to $3.40. But dairymen, with mostly home-grown grain, kept pouring grain to their cows at a current rate 8 per cent above last year, and production per cow has boomed 5 per cent. So now the government is buying about 6.8 per cent of all milk produced to maintain the support price. This level of purchases is the highest since 1953. The total costs of dairy products purchased may reach $380 million compared to $210 million last year.

Meanwhile, the President is getting hard-nosed about government spending. And so is everyone else. Farm program costs must be scaled down. What can he do about dairy?

Secretary Freeman knows that prices could be maintained, and even improved, if supply and demand were brought into balance. There would be no government cost if there was no surplus. Everyone would be happy. But farmers do not want to control supply.

If farmers will not control their marketings and balance supply and demand at a reasonable price level, what is left?

The Secretary can slash milk prices 34 cents per hundred under existing law. However, he would still be buying butter, cheese, and powder to maintain a $3.06 support level.

Or he can ask for legislation to reduce supports below 75 per cent of parity. Then prices could fall from 60 to 90 cents per hundred below present prices.

Obviously, cutting prices has little farm or political appeal. Is there another way out? Possibly. There is still the direct-payment or Brannan-Plan type of program. Many processors and government administrators like it for obvious reasons. But government isn't about to write a blank check here, either. In return for direct payments, production controls would be required or the cost would be astronomical.

Meanwhile, as we ride the merry-go-round, the haunting surplus builds up, costs soar, and no one is content. We suspect that were it not for political considerations, the Secretary would just as soon let prices go plummeting and leave them there until such time as dairymen accept some responsibility in balancing supply and demand. But this would be political suicide, particularly in the 1962 election year. Even Secretary Benson did not ask for permission to drop prices below the 75 per cent of parity level. He increased them in an election year.

To top it off, dairy is but one of many farm commodities. Others are in worse straits.

Out in Salt Lake City, Mr. Benson must be smiling with sympathetic understanding. He faced the same problems and utter frustrations. Though the two men differ in political beliefs and on farm policy, they have many desirable personal attributes in common. Neither of them have found an easy way out.

And no one will so long as agriculture insists on having its cake and eating it, too. Reasonable prices and production without regard for the market are completely incompatible as both Benson and Freeman know.

Questions from Our Readers

Battery for starting

Is serious damage done to either battery if a 12-volt battery is connected for just an instant to the terminals of a 6-volt battery on another tractor to give it that extra boost for cold weather starting?
Maryland H.H.S.

Usually, the connection of a 12-volt battery to the terminals of a 6-volt battery should not cause any damage to either battery, if connected for only a short period of time. This is a fairly common practice for the purpose of starting tractors during cold weather.

However, there are a few precautions. You should be certain to have the polarities correct in the connection and, in some instances, if the starter terminal is available, it might be desirable to make the connection directly to the starter. You should be careful not to have any auxiliary equipment, such as lights, in operation because the 12-volt battery might damage them in a short time, particularly if starter was not operating when connection was made.

You should, of course, remove the 12-volt battery from the circuit as soon as possible and it would be advisable not to operate the starter for a long period of time with the 12-volt battery in the circuit, since under these conditions, the starter would overheat much more rapidly than normal.

—G. P. BARRINGTON
University of Wisconsin

What is corn worth?

How can I figure the value of ear corn on a per ton price with ear corn ranging in moisture content from 15 per cent upward to 30 per cent with dry shelled corn at a price of 94 cents a bushel?

I can buy ear corn, in a crib, with 28 per cent moisture content, at $20 per ton. Would this be a fair price for the ear corn?
Minnesota C.O.

The water content of the cob will vary somewhat even when the kernel has a specific moisture percentage. As an average when the kernel has a 28 per cent moisture content, 87 pounds of ear corn would be necessary to yield 56 pounds of shelled corn at 15.5 per cent moisture content. Thus, a ton of 28 per cent ear corn would yield about 23 bushels of shelled corn when dried to 15.5 per cent moisture.

Approximately 10 pounds of water must be removed per bushel to dry the shelled corn from 28 per cent to 15.5 per cent moisture. This will cost about 10 to 13 cents per bushel. Shelling cost also must be considered, which is approximately 5 cents per bushel. Thus, when No. 2 shelled corn is selling at 94 cents per bushel, we deduct 15 cents for shelling and drying costs and a ton of ear corn at 20 per cent kernel moisture should be worth about $18.17. —ORRIN I. BERGE
University of Wisconsin

Air vents in bulk tank

My open-type bulk tank has three holes in the bottom, one in the middle and one on each end. I was told they were put there for moisture to drain out, should any get inside on the insulation.

Several people have said these would rust out and become bigger and after awhile a bad odor would come out of these holes, too. What is your opinion?
Minnesota G.P.

The vent holes, which you ask about, are used in many makes of coolers. We have seen very few tanks where these vent holes have given any trouble. They are essential for keeping the insulation dry and must be used with certain types of insulation.

Generally, they are located so there is little danger of forcing water into them. However, it is possible, when washing down the tank and floor, to get a little water on the bottom of the tank at this point. This should be no problem, if care is exercised.

Under some conditions, it is possible that a very small quantity of condensation might drip out of the vent holes but, normally, this would cause no trouble.

—G. P. BARRINGTON
University of Wisconsin

Thawing frozen pipes

I am interested in the 6-volt storage battery hookup on water pipes leading from the cistern underground to the house, a distance of 70 feet. What type and size insulated wire would it take from battery onto the galvanized pipe inside the cistern on water line and also inside the house on water line with battery in between?
Wisconsin C.J.G.

I am somewhat doubtful that a 6-volt battery would be a very desirable method of thawing pipe involving a run of 70 feet. This method is acceptable for relatively short lengths of frozen pipe.

A fully-charged 100-ampere-hour battery would be capable of melting about three pounds of ice, if all the energy available went into heating the ice. It is probable, in thawing the pipe, particularly one buried in the ground, that some of the energy will be utilized in warming the pipes and the surrounding soil.

Further, the heat generated in the circuit will be dependent on the resistance of the wiring and pipe to the flow of electricity. Therefore, the electrical resistance of wiring must be very low in relationship to the electrical resistance of the pipe, if the heat is to be generated in the pipes and not in the wiring.

For a length of 70 feet, your electric cable would need to be about #0000 in order to have half of the total heat actually generated in the 70 feet of pipe, assuming that your pipe is ¾-inch galvanized iron. If the pipe is larger than this, the wire would have to be larger.

You would find, therefore, that the cable would be quite expensive and, further, that the heat generated in 70 feet from the energy available in the battery might not be sufficient to melt the ice in the pipes.

There is one other possible solution which might be advisable on a temporary basis. That is to cover the soil above the pipe with about six inches of straw, manure, or some other similar insulating material. Sometimes protecting the surface from freezing temperatures will cause the soil below such insulation to thaw due to the fact some heat is available in the earth below the frost line. This will not always work, but may help if your pipe is buried at a reasonable depth.

I would recommend that as soon as it is possible to do so that the pipe be buried at a sufficient depth to protect it. In your area of Wisconsin, this would be at least six feet below the soil surface.

—G. P. BARRINGTON
University of Wisconsin

Paint peeled

Two years ago we filled the walls of our house with insulation. Since that time most of the paint has peeled off the walls. Rather than repaint we would like to cover the walls with imitation brick siding. Will this be all right?
Iowa A.J.H.

The imitation brick will cover the unsightly paint; however, it will not correct the problem. The moisture which is coming through the wall and forcing the paint off will continue, except that it will be trapped behind the new material you plan to put on. This will lead to rapid decay in the wall.

The answer to the problem is to install a satisfactory vapor barrier on the inside wall so that moisture cannot get into the insulation. An alternative is to place vents in the outside walls between each pair of studding so that moisture entering the wall from the inside can escape.

If the inside walls are plaster, two coats of oil base paint applied to them should do the job.

Suitable vents are available commercially. Four or five ¾-inch holes well distributed between the sill and plate, drilled so they slope upward will serve the same purpose.

—D. W. BATES
University of Minnesota

Removing milkstone

For years, we have practiced all the suggestions concerning the prevention of milkstone (November 10, 1960 issue).

The only effective means we found was the frequent use of a chemical cleaner. We even added a water softener system, but still the milkstone or waterstone continued to build up, although at a slower rate.

Today we are no longer bothered with the problem. We found the answer in drying the milk machine pails with a dishcloth before they are completely dry. The strainer with its mirror finish has never been a problem.
Illinois L.E.C.

I certainly can sympathize with you and the seemingly impossible solution to milkstone formation, for I have been on a great many dairy farms similarly bothered. There is a solution, however, and I hope some of the following suggestions will help you find it.

First of all, it is considered bad practice from a public health standpoint to use a towel to dry food utensils in the milk house, restaurant, or tavern, and health officials spend a good bit of their time seeing that towels are not used. Health authorities will also tell you that dish towels should not even be used in the home. This is one of the big selling points used by the automatic dishwasher people.

A towel may brighten the surface of your utensils but at the same time it recontaminates this surface with bacteria. Perhaps in such large numbers that the sanitizing rinse used just before milking will not kill all of them, and some of them get into the milk. There can be far more bacteria on a bright shiny surface than on a dull one. Please discontinue using the dishcloth.

In an attempt to get away from the problem of milkstone, some farmers use an acid milkstone remover daily in place of a dairy cleanser and it is not long before they are bothered with a fat-protein build-up. Acids will not handle fats as is shown by the Babcock test where concentrated sulfuric acid digests everything in the milk **but** the fat. You might get the job done with an acid-wetting agent combination, but only with temperatures far too high for hand washing.

It would be my suggestion that you wash your utensils with a suitable brush and a good alkaline dairy cleanser especially compounded for hard water. Then add to your hot rinse water, at the rate of one ounce to five gallons, a good acid cleanser. Acidify your rinse water in this way every day. Rack utensils and let drain dry. Sanitize just before use.

—D. T. TYLER

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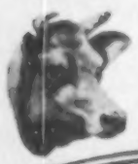

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Feeding

by M. E. McCullough

A substitute for corn silage?

In areas where corn is undependable because of weather, forage crops preserved with high-energy additives can be just as profitable.

PRODUCING high-energy silages by adding corn, citrus pulp, distillers' grains, or other feed additives to grass or legume silage has been practiced by dairymen for years. In recent years, several experiment stations have worked with this type of silage and called it "all-in-one" silage, "corn preserved" silage, and several other names.

With the relatively low prices for grain and current interest in heavier grain feeding, this type of silage is generating new interest as a substitute for corn silage.

Since corn silage has long been the silage of choice for dairy cows, a logical question to be asked is "Why look for a substitute?" There are two answers to the question.

First, in many areas corn is either an undependable crop because of weather or it is less productive than other forage crops.

Secondly, using forage crops to supply part of the silage reduces the total silo capacity required by permitting two crops of silage instead of one. The latter reason is becoming of greater importance on farms with large herds to which silage is being fed year-round.

Before we can build a substitute for corn silage, we must know why corn silage is so good. Of course, all corn silage isn't good. Good corn silage results from ensiling a good corn crop with a yield of 50 or more bushels of corn per acre.

> **When men speak ill of thee, live so as nobody may believe them. —Plato**

The great value of corn silage as a feed for dairy cows results from one thing, its high energy value per pound of dry matter. This value comes, in part, from the fact that about 50 per cent of corn silage comes from the ear portion and 50 per cent from the stalk. This high grain content combines well with the stalk portion to produce a silage high in digestibility and feeding value. A substitute for corn silage, therefore, must be high in digestibility and feeding value.

How to make it . . .

A suitable substitute could theoretically be made in one of two ways, by combining early-cut forage with 100 to 200 pounds of grain per ton of forage or by using a lower quality forage and more grain. In practice, we would recommend the use of early-cut forage. How well does this work?

At the Georgia Experiment Station, we recently summarized the results of feeding 27 silos of silage designed to study this factor. The results are shown in the table. In similar trials at three Southeastern experiment stations, such diverse crops as Starr millet, oats, and alfalfa with added ground ear corn have produced as much milk as good corn silage when fed free-choice to dairy cows.

Amount of additive	No. of silos	Dry matter loss in silo	Dry matter intake	Av. milk production
lbs./ton		%	lbs.	lbs.
None	7	21	20.5	29.7
100	8	16	23.7	33.6
200	12	13	25.4	33.9

Is it profitable?

Like most questions in economics, this question has no simple answer. Under Georgia conditions, this type of silage costs about $1 per ton more than good corn silage. This value does not take into consideration the additional risk in growing corn in the Southeast or the extra storage cost involved in making silage once per year.

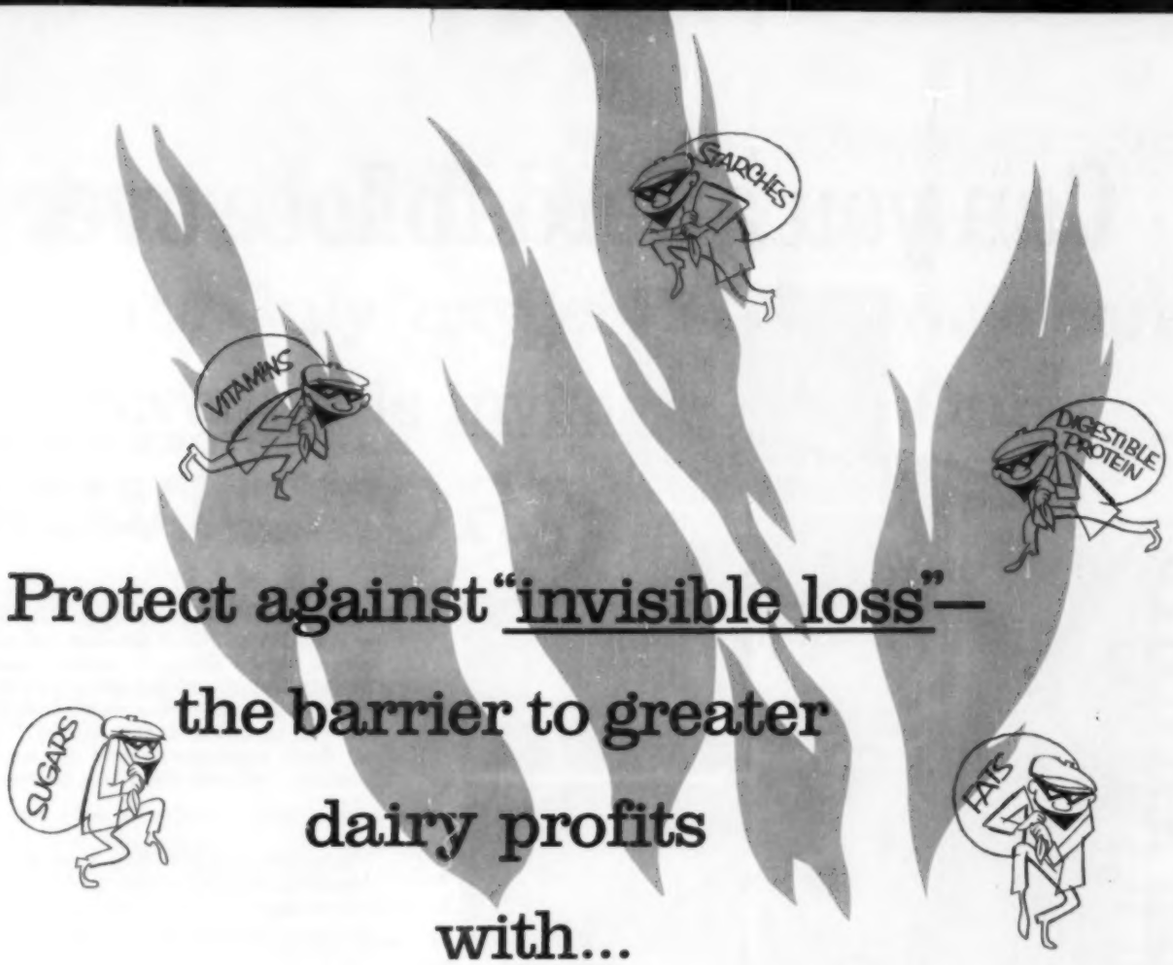
The point is that a silage equal to corn in its ability to produce milk can be made at a cost that insures low-cost milk production. The decision to make it must be made on a farm-to-farm basis.

In the silage trials referred to above, when milk was selling at $3 per hundred, the additive would have to cost $32 or less per ton to be profitable. With $5 milk the additive could cost up to $53 per ton and still be profitable.

Even these values are not "absolutes" since it is difficult to evaluate the true value of high milk production during a base-building period or the true value of feeding a high-quality silage to prevent a "summer slump" in production.

The author is dairy nutritionist at the Georgia Experiment Station.

"I want you to meet my power take-off."



Protect against "invisible loss"— the barrier to greater dairy profits with...

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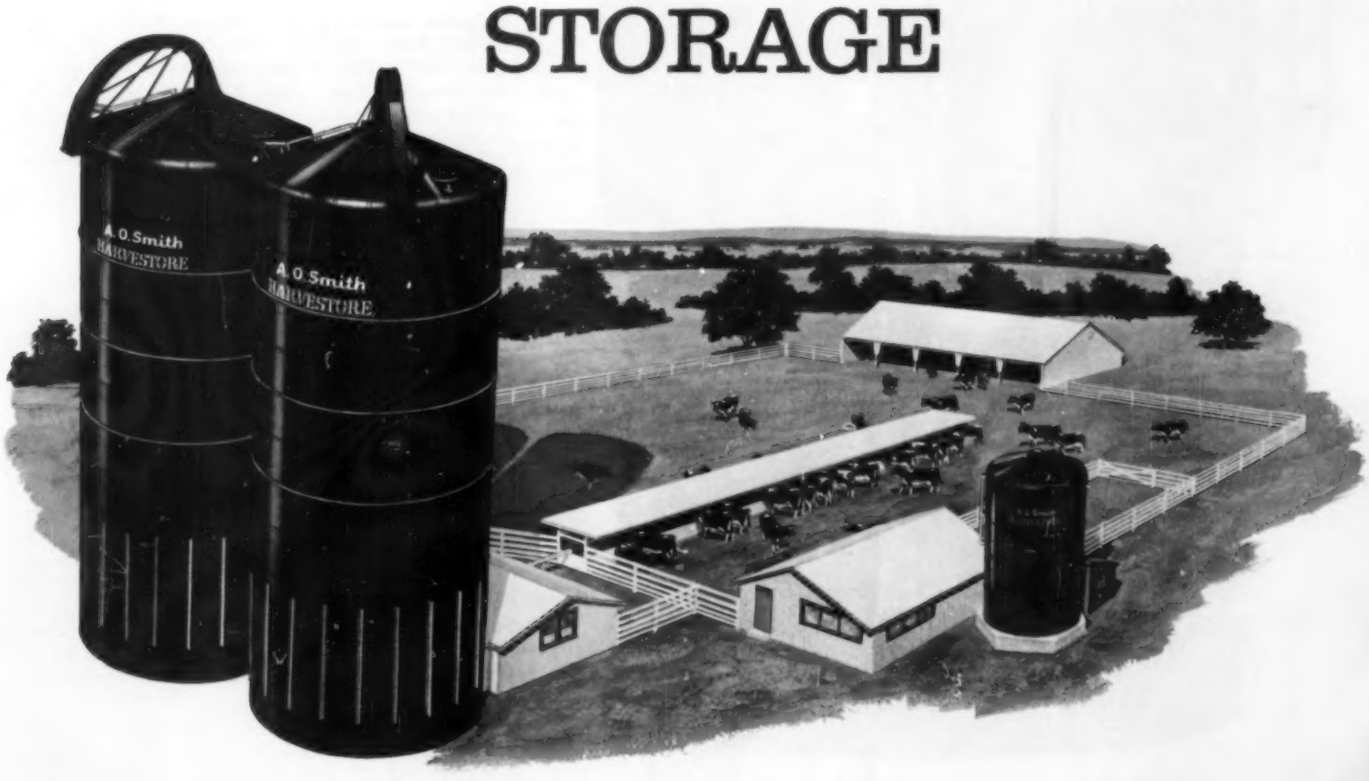

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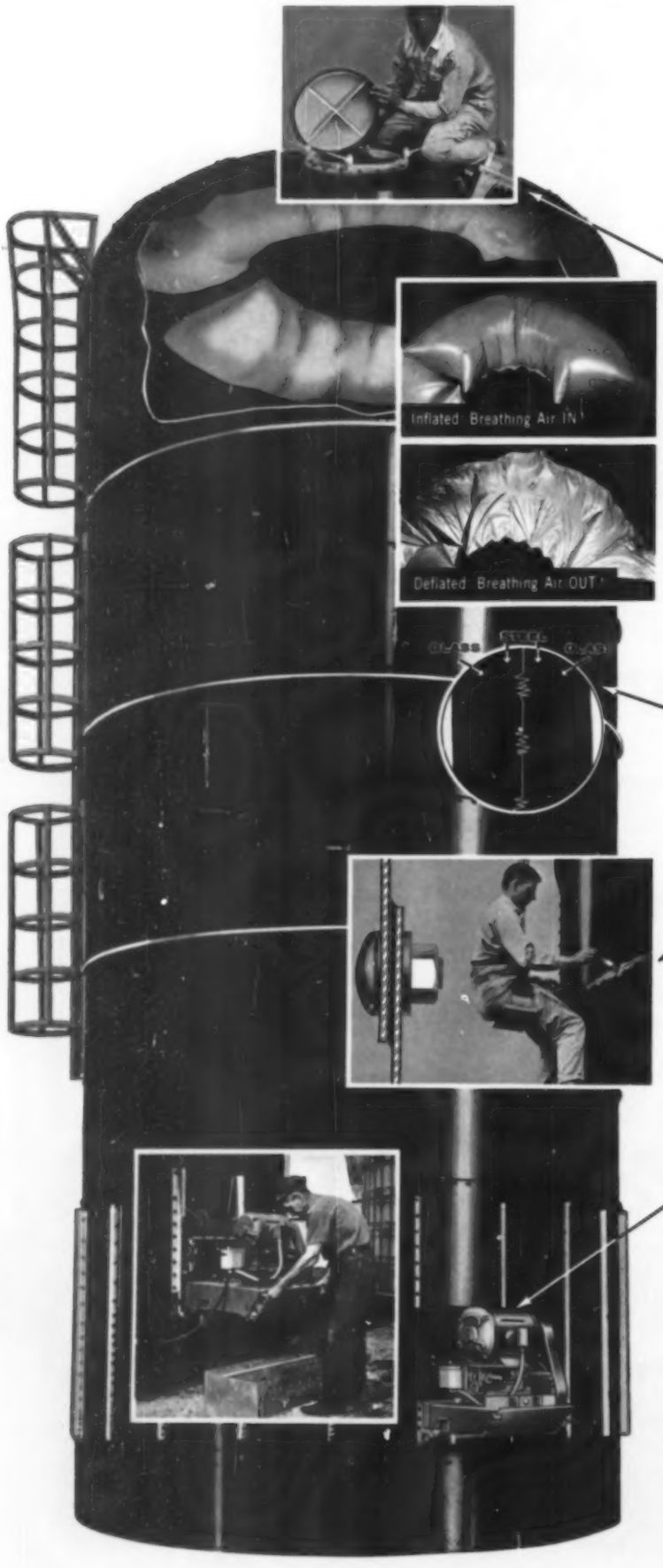


HARVESTORE is engineered and built to provide true "oxygen-free" storage

Air-tight, marine type hatches seal air out of a HARVESTORE between fillings. What little air enters during fillings is quickly converted to carbon dioxide. In conventional upright storage of low moisture grass silage, even when attempts at sealing are used, the real hazard is during feeding. Then oxygen laden air freely circulates around the exposed feed so that valuable nutrients disappear, unseen into the air.

Pressure regulating breather bag system compensates for necessary internal gas pressure changes by "breathing" air in and out of the breather bags without allowing air to touch the feed. This exclusive HARVESTORE feature provides true "oxygen-free" storage of any forage or grain crop. Not true of a silo; air is allowed to contact feed, particularly during feeding, and can cause unseen loss and spoilage.

Glass-fused-to-steel construction keeps air out, too. A test conducted by the University of Massachusetts on the permeability of materials used in building silos shows that air can pass through the walls of a concrete silo but cannot penetrate the glass-lined steel walls of a HARVESTORE.

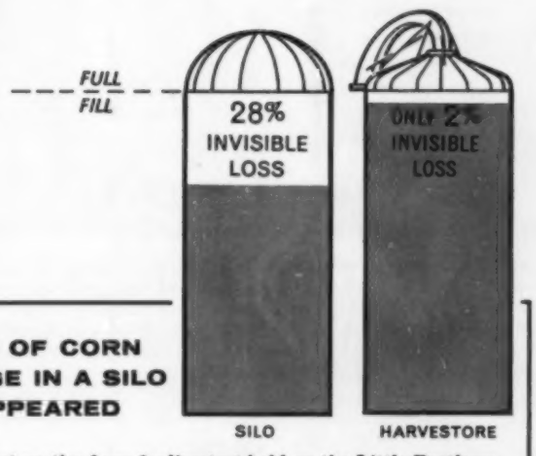
Expert sealing of joints assures that air is excluded from entering between the steel plates of a HARVESTORE. Factory-trained installation specialists place sections in an overlapping position, seal them with a special mastic compound, and securely bolt them to maintain uniform sealing power in all weather. In addition, all bolts and seams are air-pressure tested to make sure all joints are sealed. Not true of a silo; no special precautions are taken during installation to seal off air leaks.

Automatic bottom unloader opening is sealed to exclude air between feedings. Not true of a silo; with top unloading air can constantly contact feed.

"Live Storage" means continous storage —crop after crop. With a HARVESTORE you can fill in at the top and feed out at the bottom any time. This principle of the continuous storing and feeding of crops on a first-in, first-out basis means that you can often double and triple the tonnage of feed handled. In comparison, a conventional silo with top unloading is usually unloaded before filling and does not provide for this flexibility and economy in the storing and feeding of farm crops.

your ensiled feeds?... Of course you can't...Only "oxygen-free" storage can help prevent this invisible loss...Only HARVESTORE®

provides true "oxygen-free" storage



28% OF CORN SILAGE IN A SILO DISAPPEARED

In a recent on-the-farm feeding test held on the Little Brothers farm, Lowell, Indiana, fillings of corn silage from the same field were weighed into a HARVESTORE and a conventional upright silo. The silage was weighed out of each structure and fed to separate lots of cattle for a 112 day feeding period. Despite precautions to seal the silo, invisible and unseen loss claimed 28% of the corn silage stored in the silo. The HARVESTORE loss was less than 2%.

If you store low moisture grass silage or corn silage in a conventional upright silo, you can suffer such a loss. During a recent feeding test, invisible loss claimed 28% of the ensiled feed in a silo. On this basis, if you filled a 360-ton-capacity silo you could lose 100.8 tons of feed. Here's why...

Invisible loss—the result of air reaching feed in a conventional upright silo

This invisible loss occurs when ensiled feed is exposed to air. As the feed oxidizes, large amounts of dry matter and nutrients simply burn up and disappear. Such losses can be alarmingly huge. For each pound of feed lost to *visible* spoilage in a conventional upright silo, two or three additional pounds may be lost *invisibly*. In fact, invisible loss can occur without visible spoilage.

Plug up the cracks in a silo . . . cover it with plastic . . . but large amounts of air can still reach the feed, particularly during feeding, and cause invisible loss. The inability of a silo to prevent invisible loss can easily cost you thousands of profit dollars through wasted and weakened feed, reduced production, and higher feed costs.

HARVESTORE—the only effective protection against invisible loss

Not so with a HARVESTORE feed processing system; it practically eliminates invisible loss. Years of research went into the development of a structure incorporating the new principle of "oxygen-free" storage. Numerous quality checks are conducted during manufacturing and careful sealing and testing procedures during installation so that the HARVESTORE is properly sealed to exclude air. This is in direct contrast to a conventional upright silo which offers no new principle to exclude air.

The importance of "oxygen-free" storage in preventing invisible loss and retaining nutritive value is acknowledged by leading agricultural experiment stations. This authoritative support, plus on-the-farm research, points up two important facts: First, it's *invisible loss*—much more than visible spoilage—that makes it uneconomical to store low moisture grass silage or corn silage in a silo. Second, these feeds can be stored most profitably in a HARVESTORE.

The practical elimination of invisible loss is only one of many HARVESTORE advantages. With HARVESTORE "live storage," you can produce more milk on the same acres with less labor and lower production costs. These advantages make possible *Push Button Profits* and are the direct result of two exclusive HARVESTORE features: "oxygen-free" storage and mechanical bottom unloading.

Rely on facts—not on unsupported claims

HARVESTORE advantages are revealed from dozens of research projects—both at colleges and on the farm. This factual evidence is collected and passed on to dairy farmers so they can base their decisions on the best possible information. It will pay you to see your HARVESTORE dealer. And don't let financing hold you up. If local financing is unavailable, your HARVESTORE dealer will be happy to present the HARVESTORE Purchase Plan. For full information, return the postage paid card.

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"The additional income a HARVESTORE produces makes the investment pay for itself"

NOWERS' FARM BUREAU FARM MANAGEMENT RECORDS

	1959	*1960*	*Difference*
No. of cattle sold	143	156	+13
Lbs. of beef produced	89,259	134,854	+45,595
Bu. of corn fed to cattle	11,438	11,931	+493
Protein supplement purchased	$2,316.62	$1,764.40	−$552.22
Cost of 100 lbs. of gain	$ 18.06	$ 14.25	−$ 3.81
Return on investment (tenant)			13.59%
Return on investment (owner)			9.08%
Return per $100 feed cost	$ 126.00	$ 204.00	+$ 78.00
Bu. of corn purchased	3,790	4,356	+566
No. of hogs sold	219	324	+105
Lbs. of pork produced	60,050	77,000	+16,950

Return on investment totals 22%. According to Mr. Nowers, "The only difference between 1959 and 1960 was two fillings of a 20 x 50 foot HARVESTORE with Haylage. This required three cuttings of 50 acres of alfalfa and produced 45,595 more lbs. of beef. At 25¢ per lb. this amounted to $11,399 or $228 return per acre from alfalfa as Haylage. The additional 493 bushels of corn were offset by the $552.22 less supplement purchased.'

...says THOMAS F. NOWERS, executive vice-president and director, Atkinson Trust & Savings Bank, Atkinson, Illinois. Long-time farm ownership, plus 50 years of banking experience makes Mr. Nowers an unusually well-qualified judge of HARVESTORE's financial advantages. And his judgments are proved by a study of his own HARVESTORE-equipped farm. He goes on to say . . . "Every acre harvested and fed through a HARVESTORE will return 50% to 100% more net income than conventional storing and feeding methods. The average HARVESTORE owner can double his production, lower his cost of gain 25%, and reduce his labor at least 50% in an average year.

"In 1958 and 1959, Leonard Moens, my tenant, and I added two 20 x 50 foot HARVESTORES to my farm—one for high moisture shelled corn, one for haylage and corn silage. By studying our operation, we found our HARVESTORES gave us a rate of return on investment of 22% and increased return per acre to $228 for cattle feeding alone. (For complete details, see chart at left.)

"Based on my experience as both a banker and a farm owner, I am convinced HARVESTORE is far ahead of any other crop harvesting, storing, or feeding method. Of the many startling advancements in agriculture during the last few years, HARVESTORE stands alone at the top."

What college researchers say about invisible loss in a conventional upright silo

Purdue University: Mimeo AS-299, "*Alfalfa Hay vs. Two Types of Alfalfa Haylage vs. Alfalfa Silage Fed With and Without Supplement in a Fattening Ration for Steer Calves.*" "Haylage (low moisture forage) stored in an open top concrete silo was inferior to hay or HARVESTORE haylage, when fed either with or without supplemental protein. Difficulty was experienced in feeding the open silo haylage rapidly enough to keep ahead of some spoilage. Cattle on open silo haylage would not consume as much corn as those fed hay or HARVESTORE haylage."

From a Speech, "*Results of Forage Feeding Methods and Comments on Stored Forage Feeding,*" by Russell Johannes, Superintendent, Marshfield Branch Agricultural Experimental Station, **University of Wisconsin.** "Just putting in low range moisture material (forage) is not what alone will give a good product. This along with perfect exclusion of oxygen will help in giving a low fermentation factor, a high food value retention, and a high consumption figure. However, if air is allowed to reach this mass we get a high temperature type of fermentation which will greatly reduce the feed value and, according to all information we have at our disposal, cut down greatly on digestibility."

Abstract of Paper, "*Silage Storage Losses,*" presented at First Regional Sealed Storage and Silage Conference by Oscar E. Olson, South Dakota Agricultural Experiment Station, **South Dakota State College.** "The South Dakota experiments have clearly shown the importance of the exclusion of oxygen from ensiled forage in the prevention of nutrient losses. While this factor alone cannot determine what method of storage a farmer should use, it is of major importance and should be given first order recognition in deciding what type of silo to use."

Michigan State University: Bulletin AH-36, "*A Comparison of the Feeding Value of Ensiled High Moisture Artificially Dried and Naturally Dried Corn for Fattening Steers.*" "Yearling steers were sorted as uniformly as possible into six lots of 10 steers each according to weight and type. One lot was discontinued after a short time. They were being fed from a conventional silo and it was necessary to feed so much extra corn otherwise to stay ahead of spoilage that the supply was exhausted and the test closed."

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Swine

by Fred J. Giesler

Don't sell fall pig crop short

Twice as much feed is needed to put on 100 pounds gain in 40-degree weather compared to 70 degrees. Provide a warm, dry shelter.

LITTERS farrowed in late fall, especially during the months of October and November, often go into the winter-feeding period under severe handicaps. These fall pigs usually are lacking in green feed and are short in vitamin-rich sunshine. Besides, they frequently are faced with adverse fall and winter weather conditions.

The close contact in pens is ideal for spreading parasites, and too often water is a scarce item.

Bedding often is skimpy to the point of practically bare floors when the corn and bean harvest is on.

This year's fall pig crop is estimated to be 3 per cent above 1960. The number of hogs over 6 months old on farms June 1 was 1 per cent above a year ago. From these estimates, it would appear that the number of hogs slaughtered during the fall and winter of 1961 will be up from that of a year earlier.

Good shelter saves feed . . .

Cold weather costs money in terms of extra feed when the shelter is poor. At a 70-degree temperature, a 100-pound pig usually will use about 255 pounds of feed to put on 100 pounds of gain. The same pig will use about 530 pounds of feed at a 40-degree temperature, or more than twice as much.

Warm, dry shelters not only will improve the feed conversion figures, but will increase the rate of gain. As a rule, it takes another month during the fall and winter to put a hog on the market weighing around 200 to 220 pounds.

From these figures, one can readily see that pigs really use a great deal of additional feed as fuel when they are cold and uncomfortable. This is true especially when feeders and troughs are outside in near zero weather and when ice and snow add to the discomfort when pigs must go outside for feed.

Feeding floors that have protection from the cold, rain, and snow provide more ideal conditions for the hogs to make more rapid gains. Ample dust-free bedding on a dry, well-drained floor helps prevent excessive body heat loss.

Control mange and lice . . .

Mange and lice should not be a problem for the present-day hog farmer. Both mange and lice seem to thrive very well in cold weather. This is due to the close contact hogs have with each other in their pens during this period of the year.

One good spraying with lindane on a sunshiny, warm day usually will eliminate this problem. Spraying can be done on most any mild day when the sun is shining in the fall or winter time. Occasionally it may be necessary to use a dust for controlling mange when a long period of cold weather does not permit spraying.

Good supplement needed . . .

Grains alone are not enough for hogs. Feeds that provide extra protein are needed. They are body-building substances that help produce tissue, hair, hoofs, and tendons of the hog's body.

Experience has shown that weanling pigs need rations with about 18 per cent total protein and well-grown brood sows need about 14 per cent protein.

Corn contains only 9 per cent protein and small grains average about 12 per cent. Furthermore, these and other seed or cereal proteins usually are not complete proteins since they lack certain amino acids which pasture and, particularly, animal by-products supply much more efficiently.

A list of widely-used protein supplements include:

Dairy by-products, (on a dry basis)—skim milk and buttermilk (34 per cent protein); whey (12 per cent protein).

Tankage and meat scraps (52 to 60 per cent). These are by-products of the packing plant.

Soybean meal (45 per cent protein). Of all plant proteins, soybean meal ranks near the top and generally is as efficient as protein from an animal source.

Linseed meal (35 per cent protein). This is lower than soybean meal and its quality is not as high.

Wheat middlings (18 per cent) and **wheat bran** (16 per cent). These mill feeds have a place in hog feeding, although perhaps they are not used as much as formerly.

Because some of the supplements contain more protein than others, and also contain varying qualities of protein in terms of amino acid content, it is necessary to feed them in different amounts.

When free-choice feeding of protein is practiced, using 25 pounds of alfalfa in the protein supplement is a good substitute for pasture.

The other ingredients of this supplement are 45 pounds soybean oil meal and 25 pounds meat scraps. Add 2.5 pounds of trace mineralized salt and 4 pounds of ground limestone.

An antibiotic supplement may be added to this protein mixture. Allow about 40 grams of antibiotics per ton for pigs weighing up to 50 pounds, 20 grams per ton for pigs up to 100 pounds, and 10 grams per ton for pigs up to market weight at 200 to 220 pounds.

The total protein requirements on market hogs is as follows: Weanling 40 to 75 pounds, 16 per cent; 75 to 125 pounds, 14 per cent; 125 to 200 pounds, 12 per cent.

Grain can be ground and mixed with protein to force young pigs weighing up to 75 pounds to eat a balanced ration. As a rule, pigs weighing more than 75 pounds do a pretty fair job of balancing their own ration when fed free-choice.

Mixing the alfalfa with the protein supplement, particularly when soybean oil meal is used as the major source of protein, reduces the palatability of the soybean meal and prevents hogs from using more protein supplement than is necessary to balance the ration.

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Prolapse of the uterus . . .

. . . can be very serious; it may result in death from loss of blood or poisoning if the condition is not corrected promptly.

by E. A. Woelffer, D.V.M.

ALTHOUGH prolapse of the uterus is more common in some herds than others, almost every dairyman has seen it. The signs are obvious; a large everted mass protrudes from the vulva. If the eversion is complete, it will just about fill an old-fashioned washtub. If the animal is standing, the uterus hangs down to her hocks.

Usually the cow is found lying down, with the exposed membranes swollen and reddened and covered with straw and feces.

Some exposed uteri are severely torn and bleeding. If large blood vessels are involved, the cow may bleed to death in a short time. The cow usually exhibits restlessness, pain, and anxiety. Usually she will not eat. Pulse and breathing frequently increase except for a short period preceding death.

Prolapse may be partial or complete. It may or may not involve the bladder. Principally because of its larger size, an everted uterus can be readily differentiated from a prolapsed vagina or enlarged vaginal growth as a tumor or cyst.

Many terms are used to describe this condition. They include prolapse of the uterus, everted uterus, and casting of the "withers" or "calf bed." The exposed surface of the mass is the inner lining or mucous membranes of the uterine horns.

Cows that have had several calves are more subject to uterine prolapse than young animals; however, poorly grown and undernourished heifers will occasionally prolapse, too.

The condition occurs soon after calving. In most cases the animal dies from loss of blood or toxemia (poisoning) from infection if the condition is not corrected promptly.

Cause . . .

There are several causes and predisposing factors to uterine prolapse. Cows, like all other animals, show individual variations in size and shape. Those with long internal attachments between the reproductive tract and the pelvic cavity are more subject to prolapse. Violent or severe straining also predisposes to uterine prolapse.

Occasionally the gravid uterus will be flaccid (flabby) or diseased. This also predisposes to prolapse, particularly if the fetal membranes remain attached at the anterior (lower) end of the uterine horn.

Occasionally excessive relaxation of the pelvic and peritoneal region predisposes to this condition.

The condition is more common in dairy cattle that are stabled during the winter months, calving in stanchions with the rear parts sloping downwards and hanging over the gutter.

Prolapse may occur when great force is used in extraction followed by severe straining. Following difficult calving, a flaccid uterus is subject to prolapse because of failure to contract normally.

In cases of difficult calving, where the uterus is contracted tightly around a dry fetus, forced extraction may lead to prolapse.

A prolapsed uterus may occur following an attack of milk fever, or, because of increased abdominal pressure, from an impacted or a bloated rumen.

There is no indication that prolapse of the uterus is hereditary even though occasionally it may be seen in dam and daughter.

Chances for recovery . . .

Prospects of recovery from uterine prolapse vary greatly. The life and future breeding prospects of the individual cow are usually good if the condition is observed early, the uterus is not severely injured, the cow is able to stand, and the organs can be replaced successfully.

If a relatively large-sized blood vessel has been ruptured or the uterus has been severely lacerated, the prognosis is poor.

The outcome usually is not good if the animal is under severe shock, if the intestines are trapped or are gangrenous, or if there is pronounced pressure on the blood vessels and circulation is obstructed. Results are variable if the condition is complicated by stress as from milk fever, toxemia, paralysis, and so forth.

Occasionally the uterus is so badly torn and contaminated that amputation of the mass is the only solution to save the cow's life. Unless the individual is valuable and the reproductive tract normal, it sometimes is advisable to sell the animal for beef later on.

Occasionally when a recovered animal is rebred the pregnancy terminates in abortion, membranes may be retained, or other complications develop.

In most cases, however, the corrected uterine prolapse comes along fine, and seldom does the condition recur in the same individual.

What to do . . .

When a prolapsed uterus is discovered, lose no time in calling your veterinarian. In meantime try to make the cow comfortable and keep her as quiet as possible.

Clean up around her and have plenty of clean bedding under her. See that there is plenty of hot water available, and, if required, begin cleaning the exposed tissues by gently bathing the uterus in warm water. Place a wet towel or sheet under and around it to retard congestion and avoid further contamination.

If the cow is standing, support the uterus, with a clean sheet or towel, on a level with the vulva.

This preliminary procedure may be enough to prevent severe contamination, additional swelling, and rupture of uterine vessels.

In Japan there is only 1 cow for about every 413 people, while in the United States there is 1 cow for each 8 people.

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SQUIBB A NAME YOU CAN TRUST

What kind of insurance should you buy?

Visiting cousin broke his arm.

Bought an $8,000 herd sire.

Installed a hay drier in the barn.

Horse was killed on the highway.

by George A. Strader

YOU face financial risks today which raise questions that would have seemed fantastic a generation, or even 10 years, ago. Here are some of the reasons:

- Development of machinery that creates new physical hazards.
- The extension of highway systems that bring a new type of claim-conscious city travelers to once remote areas.
- The enactment of legislation that makes the farm owner heavily responsible for the safety of his hired hands.

All these and more raise questions that farm owners must answer or face serious financial loss.

Here are a few:

We are now forced to hire a full-time man. What insurance is necessary to cover any injuries he might suffer while on the job?

Workmen's compensation insurance on farm hands is compulsory in certain states. When not compulsory, it is essential that farm owners protect themselves against lawsuits with employers' liability.

The latter may be had either as a separate policy or by endorsement to the farmers' comprehensive personal liability policy. Use of the latter is recommended where state laws permit; it is economical and covers many risks. Domestic employees are covered by the basic policy and farm employees may be covered optionally. But check your state laws on this question.

Visiting city cousins brought a 10-year-old youngster who, despite our repeated warnings, fell off a load of hay and broke his arm. What kind of insurance would cover the medical bills involved?

Medical payments insurance, a part of the basic farmers' comprehensive personal liability policy covers all necessary ambulance, medical, surgical, and hospital service.

Responsibility for the accident is not involved, but the protection does not apply when the victim is covered by workmen's compensation or employers' liability insurance, and care should be used to be sure that paying guests are covered in the protection.

How can we insure our new $8,000 herd sire so we would be covered if injury or sickness put him out of service?

You can insure his life, but not his libido (desire to breed). A livestock mortality policy will cover his life on the farm, a livestock floater while being transported, but both policies exclude depreciation and unfitness for intended use, that is for breeding purposes.

Lloyds of London might cover injury or sickness at a price, and you might try to arrange it through your own insurance man. It would be best, it seems to me, to insure the animal's life and, at the same time, to set up a sufficient reserve fund out of his earnings to replace him should he become unproductive.

Would the installation of a hay drier, used only during harvest, alter the coverage on our barn and its contents?

It might, but probably won't raise your rate. Modern hay driers rarely increase the fire hazard but, if yours does, your company might have an "out" after a fire. Equally important, do the contents of the barn increase greatly in value after the harvest? If so, you may find yourself underinsured with your present protection.

You can change your valuations on a monthly basis, if you wish, by using a monthly reporting form or other means your local agent can provide. Your protection and premiums will thus remain neither more nor less than you require. Query your agent on both angles. You are paying him for just such service.

Our bulk milk handler ruined one of his tires on a sickle bar in our yard. He claims our insurance should provide a replacement. Is this true?

Yes, if you carry property damage insurance and if he can show that you were negligent in leaving the sickle bar at the scene of the damage. This sort of claim would also be taken care of by farmers' comprehensive personal liability insurance or by a separate liability policy. The former is recommended for its all-round protection and relatively low cost.

A city driver struck and killed one of my horses on the road outside my place. He not only paid no attention to the bill I sent him for the horse, but he had a lawyer threaten to sue me for damage to his car. How can I protect myself against such people?

You are very fortunate if the lawyer only threatened you. If he had sued and proved you negligent, he could have collected for his damaged car. The courts are now bearing down very hard on farmers who permit their animals to roam at will.

You can protect yourself against the animal loss in such cases by the addition of animal collision coverage to your present insurance,

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at a cost of only $3 per year for each $300 of animal collision protection. But you will still need liability insurance to cover the damage to the claimant's property.

Is there any single type of insurance policy that provides complete protection against all risks?

No, and I doubt that there ever will be, human and animal nature being what it is.

Several of the insurance companies are now developing a farm owners' policy very similar in its protection to the familiar home owners' policy. This policy will cover practically all of the perils not included in the farmers' comprehensive personal liability policy.

The latter policy can be made a part of the farm owners' policy and the combined unit will then provide protection against practically every peril to which the farmer is exposed; endorsements can be added to include any policy omissions.

But, the farm owners' policy is not yet available on a countrywide basis. Until it is, the present lines of fire and extended coverage, plus farmers' comprehensive personal liability, must be used where the new policy is not yet offered.

The gem cannot be polished without friction, nor man perfected without trials.
— Chinese Proverb

You will have noted how often, in this series of questions, the farmers' comprehensive personal liability policy has provided the answer. This coverage surely offers the maximum for the minimum.

It is difficult to quote premiums on a countrywide basis to farm owners of varied interests, but it may be said that the approximate cost of such a policy is $40.50 for 3 full years, about $13.50 a year. You would be insured for $25,000 against judgments imposed by law, plus $250 medical payments insurance, plus $300 animal collision coverage. If you buy on the annual plan it will cost you $15 a year. You save $4.50 by buying over the 3 years.

This is, of course, the basic policy, which will take care of many small- and medium-sized farms. If more than 160 acres are involved, a moderate additional charge is added. And, if workmen's compensation or employers' liability is added, there is a charge for any such specific endorsements.

But, all in all, comprehensive farmers' personal liability insurance offers more in operating protection per premium dollar, than any insurance policy I can imagine you buying.

U. of Minnesota given registered Ayrshires

Ten registered Ayrshire females have been presented to the University of Minnesota by Dr. and Mrs. R. B. Graves, owners of Mor-Ayr Farms, Red Wing, Minn. The group includes four mature cows, four bred heifers, and two heifer calves which are to be used as the foundation for a representative Ayrshire herd that will be kept on the St. Paul campus.

Dr. C. L. Cole, head of the dairy husbandry department, who selected the animals, said the Ayrshires will be used for production and classroom work. The University has not had an Ayrshire herd since the early 30's.

Dr. Graves, a director of the Ayrshire Breeders' Association, owns 76 registered Ayrshires and at the latest classification, the herd scored an average of 87.5.

Maryland schedules Breeders' Institute

Dr. W. E. Petersen of the University of Minnesota and Dr. E. S. Harrison of Harden Farms, New York, will highlight the program of the second Maryland Dairy Cattle Breeders' Institute. On December 4 the institute will be held in Walkersville, in Frederick County. And on December 5 in Centreville in Queen Annes County.

Can you select for regular and easy calving?

(Continued from page 1091)

Artificial breeding has increased dramatically in recent years and justifiably so. We are approaching the 40 per cent mark for all dairy cows in the U.S.

The tremendous advantages of A.I. have opened up entire new horizons for commercial and purebred herds alike. Yet widespread use of a few sires, superior as they may be, must cause us to be on our guard. Probably no sire alive is completely free of undesirable and harmful genes.

To illustrate, we can look to the condition of ovarian hypoplasia discovered in Highland cattle in Sweden prior to World War II.

Shown to be heritable, the condition resulted in animals maturing with only one fully-developed ovary (and sometimes none). Conception rates varied from zero to normal in these animals. Because of their extreme desirability as transmitters of high fat percentage, two carrier bulls were used widely. Some 30 per cent of the Highland cows were afflicted by the time corrective actions, examinations and slaughter were taken.

The question still remains, what should we be doing? And the answer isn't really too satisfactory.

Perhaps the forces of natural selection are enough, although this was certainly not the case with ovarian hypoplasia. Perhaps we are automatically selecting for efficient reproduction.

Personally, I would suggest that our sire selection committees continue to select sires from long-lived cows which have reproduced regularly. I would avoid families with specific reproductive weaknesses such as cystic ovaries and high frequencies of twinning, if I had the opportunity to select between bulls of apparently equal merit otherwise.

As a dairyman, I would make every effort to keep conception rates high by the best in management. Proper sire selection, and the self-limiting tendency of poor reproduction, will probably be enough to avoid genetic deterioration among our females.

Most of all, we must remain on the alert. Future findings may show that our time was wasted. I would advise against taking that chance. **THE END**

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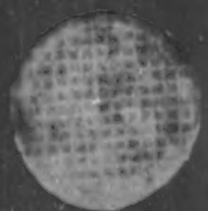

Atmospheric tank sediment disk showed considerable dust deposits—none with the protected Mojonnier Vacuum Bulk Cooler.

To get this proof we duplicated the most adverse conditions that could be expected on the farm . . . one of the hottest, windiest periods of the year. As pictured, we mounted a Mojonnier Vacuum Bulk Cooler next to an atmospheric tank, and took them to the dustiest place we could find—a rock crushing quarry which stored large quantities of crushed limestone screenings containing about 60% dust.

THE TEST

Both 300 gallon tanks were half filled with clean, fresh milk—both were equipped with 1½ HP compressors to hold the milk temperature at 38°F during the 24 hour storage period, after which the contents were examined by an independent research laboratory.

RESULTS

VACUUM BULK COOLER	REASON WHY	TEMPERATURE PROTECTION	REASON WHY
No evidence of contamination . . . milk appeared as clean and fresh as before storage period.	Positive cover latching insures an extremely tight seal.	Condensing unit on atmospheric tank ran 12.2% longer than Vacuum Bulk Cooler to maintain identical storage temperature.	The Vacuum Bulk Cooler is fully insulated, except manhole covers. Covers are tightly sealed.
ATMOSPHERIC TANK			
Flies and other insects visible on milk surface. Sediment disk shows considerable dust content.	Unsealed covers permit exposure to air and outside contamination.		The entire top of the atmospheric tank is uninsulated as well as unsealed.

What does this mean to you? With the Mojonnier Vacuum Bulk Cooler you make more money in 2 ways . . . first, by maintaining highest milk quality you can compete for the best market in your area . . . secondly, the condensing unit operates less each day, lowering power costs and increasing the life of your equipment.

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Ringside notes . . .

from the All American Jersey Show

Columbus, Ohio, October 14 to 18

SPECIAL AWARDS at All American were presented by Dr. Clyde Rougeou, second from right, president of The American Jersey Cattle Club. Left to right: H. Uihlein, Heaven Hill Farms, Lake Placid, N.Y., Premier Exhibitor; E. Lea Marsh, Jr., Pioneer Farm, Old Lyme, Conn., accepting herdsman award for Carl Bourne, his herdsman; Rougeou; and C. Scott Mayfield, Athens, Tenn., Premier Breeder.

WITH All American activities spread out over five days, the ringside varied considerably from one day to the next. It is hoped that another year, one and possibly two days may be cut from the lengthy schedule, thus permitting more of the folks to take in all the events. Again there were very few witnessing this outstanding show who weren't already Jersey breeders.

• • • •

One of the impressive features of the All American is the number of employees of The American Jersey Cattle Club who actively participate. About 30, including all the fieldmen, do the work and this is bound to result in greater interest among the employees in the club's major activity of the year.

• • • •

Ten cows were entered in the 1961 All American Milking Derby. Their combined production was more than 1 ton of milk in 4½ days. The winner was Jester Basil Dandy Star, owned by Chester Folck and Sons, Springfield, Ohio, that produced 278.5 pounds of milk.

As an added feature of the Derby, the milk was tested for percentage of solids at each milking. First in total solids was Beacon Bas Little Lady, owned by Mayfield Farms, Athens, Tenn., that was fourth in the Derby. Otherwise, the cows finished in total solids as they did in total milk.

• • • •

Best uddered cow in the aged cow class was Beacon Bas Belle, shown by Mayfield, that has a record of more than 18,000 pounds milk in one lactation. She placed sixth in the class of 24.

• • • •

It was a tense moment during the contest for champion in the All American Junior Show. The eventual champion, Mike's Draconis Rose, shown by Joe Knolle, Sandia, Texas, and Beacon Bas Tulip, shown by Elaine Mayfield, Athens, Tenn., were studied long and hard by Judge John Morris, University of Maryland. He finally called for a milkout of those two cows, then after more deliberation, made the Texas cow champion in a very close decision. Miss Mayfield's entry, the reserve grand champion, was grand champion of both the junior and senior shows last year.

• • • •

The champion cow, Mike's Draconis Rose, has been unusually prolific. A year ago she gave birth to twins at the All American and two weeks before this year's show had another set of twins. That makes 4 calves in 11 months.

• • • •

Louise Knolle, American Dairy Princess, added much to the color of the show before she had to leave for another engagement Monday morning. She awarded the ribbons and rode the very attractive float that preceded the Jug Futurity classes. Incidentally, Louise and her brother, Charles, had the reserve junior champion in the Junior Show on their top senior yearling heifer, Masterman Jab Lass.

• • • •

Two Ohio entries won top honors in the National Jersey Jug Futurity classes. Sparkle Success Basil, shown by Ray Wetherell, Sr., and his son, Ray, Pickerington, won the 3-year-old bull class. In the largest class of 3-year-old cows ever to compete in the Futurity, Golden Etta Beauty, exhibited by Myers Jersey Farm, Troy, won first, including a premium of $1,004. Total purse was $4,166.

• • • •

Paul Sparrow, veteran showman in charge of the Mayfield show herd, won the W. E. Weaver Family trophy awarded to the top showman. Bill Weaver, now living in Arizona, was on hand to present the award. The Paul Jackson Herdsmanship Trophy went to Carl Bourne, popular herdsman for Pioneer Farms, Old Lyme, Conn.

• • • •

The award for best exhibit of the show went to the Kentucky Jerseys, Carrollton, Ky., in charge of Dr. Henry Flotemersch, who also played the organ during part of the Futurity Show Sunday afternoon. The boys from Kentucky kept things lively throughout the week, staging everything from regular inspections among their help to a football game in the judging arena one evening. Tom Harris doubled as announcer and game referee.

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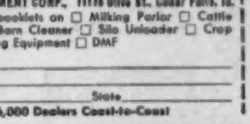

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Dairy Farm Home

Baking for The Holidays

. . . plus freeze-ahead salads and desserts that will put you a jump ahead in your preparations.

by Marian Pike

Mincemeat Coffee Cake Bars . . . a filled sweet bread

- ¼ cup milk
- ½ cup sugar
- ½ teaspoon salt
- ¼ cup (½ stick) butter
- ¼ cup very warm water
- 1 package dry or compressed yeast
- 1 egg, well beaten
- 1 teaspoon grated lemon rind
- 4 cups sifted flour
- 2 cups prepared mincemeat
- 1 cup sifted confectioners' sugar
- 1 tablespoon cream
- ¼ teaspoon lemon extract

Decorative candies

Scald milk. Stir in sugar, salt, and butter. Cool to lukewarm. Measure very warm water into a large mixing bowl. Sprinkle or crumble in yeast; stir until dissolved.

Stir in lukewarm milk mixture, egg, lemon rind, and half the flour. Beat until smooth. Stir in remaining flour. Turn out on lightly-floured board and knead until smooth and elastic. Place in a buttered bowl; brush top with soft butter. Cover and let rise in warm place, free from draft, until doubled in bulk, about 1 hour.

Punch down and turn out onto lightly-floured board. Divide dough in half. Roll each half into an oblong 15 x 10 inches. Place one-half on large buttered baking sheet. Brush with softened butter. Spread with mincemeat. Cover with other oblong of dough. Cover and let rise until double in bulk, about 1 hour.

Bake in moderate oven (350 degrees) about 20 minutes. When cool, frost with icing made by beating together the confectioners' sugar, cream, and flavoring. Sprinkle with decorative candies. To serve, cut into squares.

A Fruit Cake . . . rich and fragrant

- 1 pound seedless raisins
- ½ pound currants
- ½ pound candied pineapple
- ½ pound citron
- ½ pound candied cherries
- ½ cup apple juice
- 3 cups sifted all-purpose flour
- 1 teaspoon baking powder
- 1 teaspoon salt
- 2 teaspoons cinnamon
- ½ teaspoon nutmeg
- ¼ teaspoon allspice
- 6 eggs
- 1 cup butter
- 1 cup sugar
- 2 cups canned applesauce

Wash raisins and currants; dry. Cut pineapple, citron, and cherries; combine with raisins and currants. Pour apple juice over fruits; let stand 3 hours. Sift together flour, baking powder, salt, cinnamon, nutmeg, and allspice. Beat eggs until very light. Cream together butter and sugar; add eggs; mix well. Add applesauce and flour mixture alternately to creamed mixture. Add fruits a small amount at a time mixing until all the fruit is thoroughly coated.

Line 10-inch tube pan with double thickness waxed paper. Butter well. Pour batter into pan. Bake in slow oven, 275 degrees, 4½ hours. Makes one 5½-pound cake. To keep, wrap and freeze.

Decorative touch: Frosted grapes with each serving.

Freeze-aheads

Frozen Strawberry Pie . . .

- 1 pint frozen strawberries
- ¼ cup sugar
- 2 egg whites
- 1 tablespoon lemon juice
- ⅛ teaspoon salt
- ½ cup whipping cream
- 1 baked pie shell

Place thawed berries, sugar, egg whites, lemon juice, and salt in bowl of mixer. Beat for 15 minutes, until mixture is very stiff. Whip cream, add vanilla, and fold into strawberry mixture. Pile into baked shell. Freeze.

To serve, let defrost for 15 or 20 minutes before cutting. 6 to 8.

Frozen Lemon Pie . . .

- 3 egg yolks
- 1 or 2 egg whites
- ½ cup sugar
- 2 tablespoons lemon juice
- 1 cup whipping cream
- Rind of ¼ lemon
- Vanilla wafer crumbs

Beat together the egg yolks and all but 1 tablespoon of sugar, over hot water. Add lemon juice and rind of ¼ lemon cut in strips. Remove from heat when thick.

Chill, removing rind when custard is cold. Beat egg whites. Whip cream. Fold lemon mixture, cream and egg whites together.

Pour into freezing tray which has been buttered and sprinkled with vanilla wafer crumbs. Cover top with more crumbs. Freeze.

To serve, cut in rectangles; then cut rectangles diagonally for pie-shaped pieces. 8 to 10 servings.

Frozen Cranberry Salad . . .

- 1 pound cranberries
- 2 cups sugar
- 10 marshmallows
- 1 pint whipping cream
- 1 No. 2 can crushed pineapple
- ½ cup chopped nuts

Grind cranberries with coarse blade. Add sugar and let stand 2 hours. Add marshmallows cut fine, pineapple well drained, whipped cream, and nuts. Pour into large rectangular baking dish. Freeze. Serves 16.

FRESNO MINCEMEAT

(Plenty for cookies, pies, plus extra glassfuls to give with cookie recipe to deserving friends.)

- 2 pounds lean beef
- ¼ pound suet
- 2 cups golden raisins
- 6 cups dark raisins
- 4 cups applesauce
- Juice of 4 lemons
- 6 raw apples, finely cut
- 1 quart cider or fruit juice
- 6 cups brown sugar, packed
- 2 tablespoons cinnamon
- 1 tablespoon cloves
- 1 tablespoon nutmeg
- 1 tablespoon allspice
- 1 tablespoon salt

Cut beef into cubes; cover with water and simmer until tender; drain. Force beef and suet through food chopper. Combine with remaining ingredients, mixing thoroughly. Simmer slowly 1½ hours. Pour into hot sterilized jars and seal. Makes about 5 quarts. May be frozen, if desired.

From Day to Day

by Lois J. Hurley

WHEN you strip life down to bare essentials, you can't escape feelings of great respect and reverence for earth, can you? I don't mean the earth; I mean the soil mass on which we, of this planet, anyway, have such dependence.

"Call it not dirt, that mellow loam, that rich, black prairie soil, that fertile clay! It is not dirt that cleanly folks despise, but earth, kind, wholesome earth that all men prize, from which we came and unto which we shall return some day.

"Call it not dirt, that yields our daily bread, that feeds a hundred million souls! It is not dirt, to be decried or spurned, but bounteous earth that for us all has earned good health and wealth and all we have and need, as on time rolls."

So said the poet in "Song of the Soil." So do we still all feel, even in face of the great problems that have grown up because of the earth's increasing yields, as we feed it enrichments by which it produces more and more food and fiber. The soil of the earth does not let us down; it is only men who fail to work out proper distributions of its bounties.

Of late, the earth has become increasingly important, as we frail humans cast apprehensive eyes skyward in dread of threatened destruction. It is to earth, our old friend, that we turn for protection and survival, as we dig holes and lay down the footings for bomb shelters and worry about what we should be providing ourselves with, to take along to these sheltering holes, should it be necessary.

My part of the country has become very shelter-conscious, in the past few weeks. For one reason, the Wisconsin 32nd Division has been called to active service and you can't see your neighbor don uniform, tell his family goodby, and march off to military duty, without feeling apprehensive.

For another reason, our daily newspaper carries display ads of bomb shelters on page after page. When industry takes hold of a project, it gets moving. After years of apathy, we are now very aware that there are people equipped and anxious to sell us a complete survival unit, installed and ready to operate as soon as the sirens sound.

Many of us stop and ask: Survival for what? As a child, I often went into cyclone cellars, knowing that I could come out in a short while, all danger past. And if the worst happened and homes were destroyed, one could build again. The air was sweet and pure; the world was clean and the objects in it harmless. This will not be the simple case if any of us live through an atomic attack.

Fall-out from nuclear attack is intangible; you can't see, taste, smell, touch, or feel it. It is beyond our comprehension; even as I sit here and write about it, I don't believe it can happen. I look out the window at the glorious fall trees, I drink a cup of coffee; I talk to a friend on the phone. Life on earth wiped out? Impossible!

But, if it happened, earth would still be the stable element on which we could pin our hopes. The soil would eventually cleanse itself; if just a few pure seeds could be preserved, plants and crops would grow, warmed by the healing sun and watered by the eventually bomb-dust-free rain. Surely a few human beings would emerge, and start things going, again. In another million years or so, there'd be big cities and planes and TV and rockets to the moon and missiles that would probably wipe it all out so they'd have to start over again.

Oh, shucks! I give up! I don't know whether I'll dig me a hole, or not, but in case I do and stock it, here's what the U.S. Department of Agriculture recommends:

Put in a stock of food that would supply your family for two weeks; you'll need about eight kinds of food. Buy them in cans, jars, or airtight packages. Unless you know you will have cooking facilities and water (some fall-out shelters provide them) buy foods that do not require cooking and select those that will last months without refrigeration. Keep a record of what you have on hand and use up those that may need to be replaced, being sure that new supplies are added.

Stock evaporated or dried milk to give each member of the family two glasses a day. Stock canned meat, fish, chicken, soups, and prepared dishes such as stews, spaghetti, baked beans, and so forth.

Store canned and dried fruits and juices and canned vegetables enough for about three servings a day. Buy ready-to-eat cereals, cookies, crackers, canned breads, and puddings. Provide spreads, sugar, hard candies, and fats that do not need refrigeration. Add a collection of soft beverages and don't forget special foods for family members who must live on medical diets.

The mail bag . . .

Many readers seem to agree with me in my campaign against "miracle" fabrics for clothing.

"I vote whole-heartedly for the old honest-to-goodness cottons that can be washed hot, bleached, starched, and ironed to crisp whiteness. Just wanted you to know you have some of us back of you," writes a Kansas reader.

"Thank you for your discussion of easy-care fabrics," says a Wisconsin homemaker. "My favorite 'wash-and-wear' material is good old-fashioned seersucker. I made myself a two-piece suit that I wore all summer, washed it with the sheets, towels, and underclothes, sometimes with a bleach load. All the ironing it needed was a straightening of the kick pleat after it was pinned on the line."

"Keep up your good work against the 'miracle' materials manufacturers expect us to buy and wear. Sewing teachers I've worked under have all admonished the students to refuse to buy 'wash-and-wear' and 'disciplined' materials.

"I recently purchased a piece of 100 per cent cotton and what a pleasure it was to work with. Threads were straight with design; skirt hung well; and it washes beautifully crisp and bright." from a Washington, D. C. reader.

Shall we start a "dacron-must-go" movement? I've about decided it is the most offending ingredient in the limp, lifeless materials that cannot be washed, bleached, or properly ironed. It seems worse when mixed with cotton; I've dacron curtain panels that are delightful, and a dress of material sold me as all-dacron that holds up well. But with cotton, phooey!

8247. There is a good-looking air of youth about this yoked beauty — one of the prize winners in the dress design contest held at the Art Institute in Chicago. Sizes 8, 10, 12, 14, 16, 18. Bust 30 to 38. Size 10, 31 bust, monotone, 3¼ yards of 35-inch; or 2⅝ yards and ⅝ yard contrast. Price 35 cents.

8283. Here is a handsome afternoon frock for the woman who wears half sizes that is so flattering and simple to sew. Add a touch of contrast at the neck. Sizes 12½, 14½, 16½, 18½, 20½, 22½, 24½, 26½. Bust 33 to 47. Size 14½, 33 bust, 5½ yards of 35-inch; ⅞ yard contrast. Price 35 cents.

8267. This classic was created especially to flatter a woman's figure. Collar can be in contrast or monotone. Sizes 32, 34, 36, 38, 40, 42, 44, 46. Bust 34 to 48. Size 34, 36 bust, 4½ yards of 35-inch; 1 yard contrast. 35 cents.

8264 and 8265. Sailor-type look-alike frocks are fun to sew and fun to wear. 8264 is in sizes 10, 12, 14, 16, 18, 20. Bust 31 to 40. Size 12, 32 bust, with sleeves, 5⅝ yards of 35-inch; 1 yard contrast. 8265 is in sizes 3, 4, 5, 6, 7, 8 years. Size 4, with sleeves, 2⅛ yards of 35-inch; ½ yard contrast. Two patterns, 35 cents each.

8197. Top favorite in every well-groomed wardrobe—the neat shirtwaister that is seen everywhere. This one for women has yoke interest, sleeve choice. Sizes 34, 36, 38, 40, 42, 44, 46, 48. Bust 36 to 30. Size 36, 38 bust, short sleeves, 4⅞ yards of 35-inch. Price 35 cents.

8287. Isn't she a darling? A cute stuffed doll that measures 30 inches, all dressed up in gay togs. Ideal playtime companion for little tots. Stuffed doll comes in one size — 30 inches. For exact requirements, see pattern. Price 35 cents.

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Poultry

by Joe W. Sicer

Egg quality problems . . .

. . . can occur in even the best-managed of flocks. Should you have a perplexing problem, here is a check list that may help you to find the cause.

LOW ALBUMEN QUALITY

Disease. Newcastle disease and infectious bronchitis can both cause watery whites. The thin albumen may continue in some flocks for prolonged periods after egg production has returned to normal.

Infectious hepatitis has been reported to cause thin whites.

Coccidiosis in laying birds can cause an excessive amount of thin albumen in eggs laid before the disease throws them out of production, but after recovery albumen quality may improve because of the "rest" while out of production. No permanent damage to the oviduct occurs as is often the case with Newcastle or bronchitis.

Length of lay. Within a strain, the relative amount of thick white decreases with the length of production. This often becomes increasingly critical after about 10 months of lay.

Heredity. Some hens produce eggs which have whites that are relatively thin even when freshly laid. This is often a strain characteristic.

Rate of lay. Within a strain, the better layers produce eggs with lower albumen quality. Changes in feeding or management which change rate of lay also could change the albumen quality.

Chemicals. When eggs are exposed to a heavy concentration of ammonia, as could be the case in poorly-ventilated houses with wet litter or accumulated manure, deterioration of the albumen is hastened. Ammonia also can increase transmission of light, causing candling grade to be lowered by making yolk shadow more defined.

Diazinon, a fly poison, if accidentally eaten by the birds will cause thin whites.

Holding conditions. The most common causes of loss of albumen quality are holding eggs at temperatures that are too high and the passing of too much time between laying of the egg and its use. Albumen quality can drop as much in 3 days at 75 degrees as it will in 15 days at 55 degrees.

CLOUDED WHITES

Wash water too hot. If eggs are washed in water at 130 degrees or higher, the albumen can be cooked and may partially coagulate. This gives a clouded, stringy apperance when egg is candled.

PINK WHITES

Cottonseed oil or cottonseed meal. Pink whites are most commonly found, along with salmon-colored yolks, in eggs stored for four months or more.

BLOOD SPOTS

Heredity. The tendency to blood spot production is inherited. This is the most important factor involved but stress may be needed to trigger spot occurrence.

Vitamin A deficiency. A level considerably below that commonly found in commercial rations increases occurrence of blood spots.

Layers confined to houses tend to produce more blood spots than do hens on pasture.

Changes in management tend to increase the incidence of spots.

MEAT SPOTS

Origin is not clear. Some may be modified blood spots. Colored meat spots are directly related to depth of brown shell color.

BLOODY WHITES

Blood spots in the albumen that completely dissolve.

MOTTLED YOLKS

Nicarbazin. This is a very effective coccidiostat the manufacturers of which warn against letting even traces get into laying mashes.

Estrogens (female hormones) dienestrol diacetate and dianisylhexene. These substances increased the occurrence of large and easily apparent spots.

Cottonseed products. Discolorations may vary from small spots to large areas of the yolk, and from olive through orange to dark brown. While most evident in stored eggs the conditions can also be found in newly laid eggs.

Holding temperature. Eggs laid by hens on non-medicated, normal rations developed some mottling in the yolks. The intensity and per cent of mottling increased as storage temperature increased. This mottling seems to be the result of unequal absorption of water by the yolk from the albumen. Fluid from the mottled spots contained 67 per cent water compared with 49 per cent in unmottled yolks.

GREEN YOLKS

Feed. Acorns, oat grass silage, shepherd's-purse, and field pennycress are all known to produce green yolks.

SOFT or THIN SHELLS

Disease. Newcastle disease, infectious bronchitis, and avian pneumoencephalitis can cause soft shell eggs, often of abnormal shape and small size.

Not enough calcium. Laying rations should carry a minimum of 3 per cent calcium. Ground limestone, 150 pounds per ton, would supply this.

Lack of vitamin D. Needed for proper utilization of calcium.

Chemicals. Arasan, a seed corn treatment, will cause soft shells. Manufacturers warn against feeding treated corn to poultry.

Certain sulfa drugs (not the ones commonly used for poultry) interfere with shell secretion.

Age of birds. Old hens are inclined to lay eggs with thinner shells than do pullets.

Temperature. Temperatures above 80 degrees handicap the ability of the hen to build strong shells.

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(Continued from page 1093)

the time milk letdown occurs.

Through research it also has been found that oxytocin is inactivated by the cow's blood stream in about 7 to 8 minutes. Therefore, it is important to apply the milking machine as soon as possible after udder washing so that the milk is obtained while the letdown mechanism is forcing the milk to bottom part of udder.

If oxytocin becomes inactivated, all of the milk will not be forced to the bottom of the udder where it can be removed by machine and will remain in the udder until the next milking. The last drawn milk is much higher in butterfat content than the first. Applying the milking machine a long time after letdown will result in a reduced yield with a lower fat count.

This same mechanism is responsible for much of the day-to-day variation in the butterfat content of milk. A continuous procedure of incomplete milk removal will greatly reduce the cow's milk yield and can cause her to dry up long before it is desirable.

Machine stripping pays . . .

The next step is one of the most variable steps and one that is often eliminated by the dairyman. This is the step of **machine stripping.** Almost all floor-type milking machines require machine stripping for complete milk out. In some of the suspended-type milking machines, it may be possible to eliminate machine stripping if the milking machine itself milks the cow out completely.

When machine stripping is carried out, it should be done when the milk flow is nearly stopped. When milk flow has decreased, teat cups have a tendency to crawl up on the udder and cause the milk supply to the teats to be shut off.

Machine stripping is done by pulling down on the teat claw with one hand and massaging the teats and the udder with the other hand. This allows the milk to move from the udder to the teats where it can be obtained by the machine.

In a Cornell experiment, it was found that the average cow requires about 37 seconds for machine stripping and will yield about 1.5 pounds of milk. If the average price of milk is $4 per hundredweight, it means that the farmer is getting a return of about $5.80 per hour of labor in machine stripping. Since the butterfat content of the last-drawn milk is extremely high, the return may actually be greater than $5.80 per hour. In addition to this high return for his labor, incomplete milking will decrease the cow's yield and cause her to dry up.

The last step of the five essential steps is **machine removal.** This is one of the places where many dairymen fall down in a good milking procedure. The milking machine should be removed just as soon as the cow is milked out. If the milking machine remains on the udder after the cow has been milked out, it may cause injury to the udder which may predispose her to mastitis.

For maximum machine efficiency the milking machine should be removed and placed on another cow as soon as possible. Many dairymen try to operate too many machine units, which leads to overmilking of many cows because they do not have time to machine strip when necessary and remove the machines. The dairyman must know his cows and know how the udder of each cow feels when it is milked out.

There is a certain amount of art in this step. The question often arises as to whether a dairyman should drop individual teat cups from quarters when they are milked out. This is a recommended procedure, but many dairymen are so busy with the regular milking routine that they do not do this. This is usually the result of operating too many machines. Each dairyman will have to determine this for himself and work it into his milking routine.

There are several other steps that may be important in a milking procedure. One of these is dipping the teats in a sanitizing solution after the milking machine is removed. This is a good procedure if the dairyman is having difficulty with mastitis or as a preventive measure. It removes excess milk on the end of the teat and also partially disinfects the teat after machine removal.

Dip teat cups?

The other step that is carried out by most dairy farmers in a milking procedure, although somewhat haphazardly, is dipping the teat cups between cows. The reason for doing this is to reduce or eliminate the mastitis organisms being carried from cow to cow.

It is impossible to eliminate all of the organisms in the milking machine in a practical dairy barn situation with methods that we have available. Probably the only way that it can be done effectively under present conditions is to use steam sterilization between cows or allow teat cups to soak in a sanitizing solution for a few minutes. This would mean having two sets of teat cups for each milking machine unit.

Dipping the teat cups between cows, if done conscientiously, can aid in reducing the number of mastitis organisms being carried from one cow to the next. The teat cups should be dipped in cold water first to remove the excess milk in the inside of the teat cups, and then dipped in the warm or hot sanitizing solution to wash out and kill some of the organisms. When this is done, the teat cups should be moved up and down in the water and the sanitizing solution so that the solution has a chance to get into the inside of the teat cup liners.

Many times the teat cups are dipped in each solution once, which does nothing more than to rinse the outside of the teat cups. In order to prevent air blocks, the milk cock has to be open in floor-type machines, and the suspended units tilted vertically. In a pipeline milker, two teat cups can be dipped at a time.

In summary, a good milking procedure involves the following five basic steps:

1. Washing the udder and teats with a warm sanitizing solution.
2. Use of a strip cup or plate.
3. Machine application in 1-2 minutes after udder washing.
4. Machine stripping when the milk flow has nearly stopped.
5. Machine removal as soon as the cow is milked out.

In addition to this, the steps in the procedure should be consistent from one time to the next so that the cow becomes accustomed to a routine.

THE END

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HOARD'S DAIRYMAN ROUND TABLE

Is your bull good enough for A. I.?

(Continued from page 1096)

Is it easy for a breeder to make a high proof on a bull?

Hendrickson: Yes, it has been done many times and that is one of the things we have to determine in our sire analysis work. Many times I've found where daughters have been fed a lot more concentrates, for instance, than the dams. Even a change in management, such as a new herdsman, can make a big difference. Disease factors also come in where they may have had a disease affecting production on the dams and which had been cured by the time the daughters come into production. Not only that, they can be selective of records and there can be a selection of daughters, where an extensive culling program has taken place.

Krumm: For a direct answer, suppose we'd have to say that in a high-level production herd it isn't easy but, on the other hand, it isn't too difficult to make a satisfactory proof, where a man really works at it.

Baldwin: It's never easy to obtain maximum production, but it is possible, through selection and careful control of management, to misinterpret a bull's worth.

Krueger: I'll go along with the rest of the fellows on this and also point out that it could be quite expensive to the breeder.

What are the breeders' major responsibilities when they have a bull they wish to sell to an artificial breeding organization?

Krumm: I'd say that No. 1 is to be honest and supply all the facts he has available, particularly when we request them. He should follow a testing and classification program that will be suitable for supplying the facts and explain the conditions under which the information is made. Basically, I think most breeders want their bulls to do a good job when they go into A.I. service, so they can be proud of the results in other peoples' herds. By giving us everything they know about the bull, it will add to their reputation as well as to ours.

Baldwin: I would just add to that, all factual information should be provided, plus the fact that if a bull is sold to an artificial breeding stud, the breeder's responsibility is to continue to supply information on that bull. I think the biggest thing they have to realize is that their reputation also rides with this bull.

Krueger: Agreeing with the other boys, the breeder should give a complete and honest evaluation of the bull. We feel the breeder himself should feel that the bull will be worthy for A.I. breeding.

Hendrickson: I think as the other boys do. The greatest responsibility a breeder has when he sells a bull into A.I. is to the breeders that are going to use the bull. The bull can make or break a lot of people. I think if a breeder realizes that, he surely is going to do everything he can to provide all the information we need to be sure the bull is the kind we want.

If a man has a bull that he thinks is going to be a credit to an artificial breeding organization, what steps should he take?

Baldwin: First of all, he should be prepared on all the provisions we have already mentioned. This should be done in a presentable manner. There are two extremes — from data on a hand towel in the barn all the way to a complete brochure with pictures and a five-generation pedigree.

Krueger: The initial contact usually being by letter, we like to see an up-to-date pedigree, all available records on the daughters, official records for both type and production. Pictures are of great value on all daughters and related females. We believe the more information, the easier it is to evaluate the bull.

Hendrickson: He also has a wonderful tool working for him in his own breed organization. He can notify the fieldman, or he can run an ad in his own breed magazine, which is often a good source for making contact.

Krumm: We prefer that he wouldn't notify other people, even our own inseminators and technicians. We prefer that he notify us direct. Not only should he supply the complete information, but he should let us know far enough ahead of time so that we're not pressed on making a decision immediately. Many breeders are ready to dispose of a bull, then want an answer very quickly. It takes us considerable time to evaluate data and make the inspections, so we ask that he give us plenty of time.

Once you decide to see a bull, how can the breeder best merchandise him?

Hendrickson: Once we have notified a breeder that we are coming to visit his farm to inspect his bull, I would think he would want the daughters in very presentable order, preferably clipped because they do look better, and surely cleaned. I like to see them in a group, if possible. He can stanchion them together, if it is winter, or corral them off in one place where we can see them. Of course, all available information should be ready for us, and we like to inspect dam-daughter pairs as far as type and production are concerned.

Krumm: Just a supplement to what Fritz said. We prefer that he have the registration papers there, in case we would want to identify some of the daughters. We'd like to have him familiar with the dams if they weren't available so we could compare them with the daughters and, in general, have them presented so they look well under practical conditions and be honest in supplying us with the facts. Probably the most common mistake we find is over-promoting the bull (saying he has no faults, no problems) that he is the greatest thing ever. Over-promoting the bull and trying to withhold information from us that we will eventually find out makes a bad impression on our committee.

Baldwin: In line with how best to promote a bull, I think it's always nice if they can arrange to make it convenient to see the

daughters of the bull in a group. Sometimes it's rather discouraging to chase the daughters around the loafing shed. You lose track of them. The same thing applies to records. Some breeders have their records in such a disorganized state that you spend hours hunting for the necessary information.

Krueger: Going along a little further, I believe that the breeder should keep in mind he is selling and the more appealing, the easier it is to sell. He shouldn't price himself out of reach nor play one stud against another.

Hendrickson: I'd like to add one thing. That is in the physical makeup and health of the bull. So many breeders forget about the bull. They leave him in the pen and never trim his feet, and so on. A lot of good bulls are going to the stockyards just because of neglect, and feet is one of the important things.

What do you consider the most important qualification for a bull going into artificial breeding?

Krumm: We probably have different qualifications, depending on whether he is a mature bull with daughters or a young analyzed sire. I assume we are all thinking that the number 1 fundamental of a bull is that he must be healthy and disease-free. The next thing is outstanding production, not only in relation to the dam, but in relation to contemporaries or stablemates in the herd with no evidence of favored treatment sufficient to account for that advantage. Next would be outstanding type in the daughters, free of consistent functional weaknesses. We may overlook some of what we call appearance factors for type, but he must be functionally sound. Next probably would be acceptance by breeders, individuality of the animal, type, pedigree, bloodline, and things that appeal in merchandising. Another point that should be well up the list would be functional traits like milking qualities and disposition.

Baldwin: I think Charlie stated the qualifications very well. Breeders in the process of proving young bulls now need to realize that five years from now (when those bulls are proven) we are going to need a stablemate, or contemporary comparison. As the breeder samples this young bull in his herd, he should at the same time use bulls of known merit on the rest of the herd. Some breeders are proving young bulls by using them across the herd with no method of ranking the bull with contemporaries. These are the bulls that will be weeded out 5 or 10 years from now.

Krueger: In addition to what has been said, and going along with the health of the bull, he should be well grown out. A lot of bulls are shuttled off to the corner of the barn and forgotten. His legs and feet are very important. Going a step further, he should be proven as young as possible. One factor that is very important in a stud is the bull's ability to breed artificially and have acceptable semen.

Hendrickson: I imagine size is taken into consideration here as being part of type. That is one thing we can't forget, for we surely want good size in all our animals.

THE END

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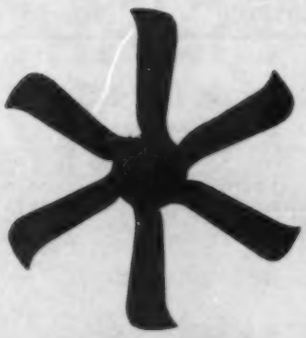
Patient: "No, sir. They've always been brown."



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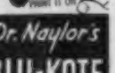

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Young Dairymen — *Getting started in dairy farming* — No. 34

He started as a hired man

Roscoe Harbaugh, Jr., moved from day laborer to renter and on to a dairy farm owner. Here is how he developed one of Maryland's best herds.

by George C. Remsberg

PART OF HARBAUGH HERD in the feeding and loafing barn area. In 1959-60, 56 registered Holsteins averaged 11,859 pounds milk and 522 pounds fat. The loose-housing system includes four-stall milking parlor.

AN OUTSTANDING DAIRYMAN maintains accurate farm records. Here Roscoe works on books while his children, Kathy and Jimmy, look on.

IT IS hard; it is tough for a young man to start dairy farming today. The days have gone when a young man could take a horse and plow and begin farming. Yes, farming is a big business now and the capital needed to purchase land, equipment, and cattle is so great that it frightens the older and experienced farmer and practically overwhelms the young neophyte.

The easiest route for a young man going into the business seems to be as a partner of Dad on an already established farm or by being fully set up by a member of the family. However, many new farmers must start the hard way by working as a hired man for some years. Then, in future years perhaps he could become a farm renter, and finally a farm owner.

Roscoe Harbaugh, Jr., found that he would have to follow the hard way if he were to become a farmer. No one in his family was able to set him up in business and since his father was not a farmer, he had little chance other than through his own initiative and determination in establishing his life work.

The author is vocational agriculture instructor, Walkersville High School, Walkersville, Maryland.

Childhood days set the stage . . .

Roscoe was born in a small rural community in Frederick County, Maryland. Since his father was not engaged in farming, he had to satisfy his love for nature and animals on the farm of his uncle, Roland Harbaugh.

As a young boy he probably spent more of his time on the farm than he did at home. The already aroused interest for animals was sharply increased in 1948 when his parents bought him a purebred Holstein dairy heifer as an F.F.A. project.

This first animal became the foundation for the beginning of one of the top herds in Maryland. This animal also caused him to decide to live with and work for his uncle while attending school. By so doing, he could care for his own animals and initiate the growth of his own herd.

While a student at Walkersville High School, he broadened his farm interests and knowledge by majoring in vocational agriculture. In his F.F.A. and 4-H activities he excelled in the fitting and showing of his dairy cattle and in competitive dairy cattle judging. While in high school he became a leader in his F.F.A. chapter, held several offices, participated in some varsity sports and various other intramural activities. He was awarded the Maryland State Farmer Degree by the State F.F.A. Association, an honor which comes to 2 per cent of the F.F.A. enrollment each year.

It must be said that his deepest interest and best work in school was done through his activities in the vo-ag program. Through wages earned and saved on his uncle's farm, he purchased many good young dairy animals from outstanding herds in the community. These purchases, along with a good breeding program on his foundation animals, gave him a herd of 20 purebred Holstein animals at high school graduation time in 1952.

Schooling over — now what?

What does a young man do after graduation when he has a small herd of cattle but no farm? Not only has he no farm, but also no capital as all wages were spent in high school toward getting more and better animals. This is a dilemma many young men face if they are not helped or set up in farming. Seventeen-year-old Harbaugh chose the only seemingly possible solution.

For the next four years, 1952 to 1956, he worked as a hired man in the farming operations of several uncles. During this time he married a school classmate, Doris Baker. For several years after their marriage Doris worked as a salesclerk to accumulate more money. Her earnings, along with her husband's wages, were invested in more cattle and farming equipment.

In 1953 Roscoe became a member of the Maryland 4-H Dairy Cattle Judging Team which won first place in the national contest at Waterloo, Iowa. This also entitled him to journey to Europe in the summer of 1954 to represent the United States in the International Contest. In 1955 he was also honored by being selected the Champion National Holstein Boy. All of these honors tended to increase his fondness for Holstein cattle and stimulated his desire for his own farm.

Opportunity finally knocks . . .

A step closer to Harbaugh's dream of owning a farm appeared in 1956. When a farm owner decided to move to Texas, he put his 250-acre dairy farm up for cash rent. The Harbaughs decided quickly to rent the farm and go into the farming business for themselves. Rent on the farm was $350 per month. They borrowed enough money from the bank to buy 20 more good milk cows, tractors, and other necessary farm equipment. Since the farm was located close to that of his uncles, he did not buy any more machinery than necessary as he borrowed and loaned with them. This sharing of machinery cut down on the amount of capital needed to begin the farm renting operation.

It was on this farm where the Harbaughs became self managers. All decisions made had to be right if they hoped to be successful in their new venture. Milk production per cow had to be increased as much as possible and a planned cropping system would have to be developed which would most efficiently support their dairy operation. The pressure was on; this was a stepping stone. So, even though it meant long hours and sacrifice, they just had to succeed.

To gain more knowledge and to share and profit from the experiences of other dairymen, Harbaugh joined a young farmers' adult

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class and attended it for several years. He also attended other farmers' meetings which brought top authorities from the University of Maryland to discuss current farm problems. All of these post high school activities tended to broaden and improve this young farmer's skill in the dairy business.

Impressive herd record . . .

Young Harbaugh has done a tremendous job of breeding and developing an outstanding herd. Out of high school only nine years, he has attained one of the highest records in Frederick County which is a leading fluid milk area. Official records of the Dairy Herd Improvement Association show that in 1959 his herd of 56 Holstein milk cows averaged 13,889 pounds of milk and 522.9 pounds of butterfat. This record was good enough to make his the seventh highest in production among the 204 herds on test. Since the national average is only 9,352 pounds of milk, we can see how impressive a record his herd has established in such a short time.

A crisis develops . . .

For three years the Harbaughs successfully carried out operations on their rented farm but then the crisis came; the farm was to be sold. Should they buy or should they try to rent elsewhere? In a thriving dairy area such as Frederick County, good farms to rent are as scarce as hen's teeth and to purchase one large enough for Harbaugh's operation would take much borrowed capital. This was indeed a critical decision for the 25-year-old Harbaughs to make.

After considerable looking, seeking advice, and finding no good renting opportunities without an excessively high rent, they decided to take the big step into farm ownership. In November of 1959 they found their new home, a 335-acre dairy farm near Thurmont, Md. It is improved with a fine home, a new modern four-stall milking parlor, and an excellent loafing barn for the dairy cattle. Financial arrangements were made and the Harbaughs became mortgaged farm owners.

Yes, the Harbaughs have attained that goal of being farm owners. True, they have a mortgage which will have to be paid off before they have complete ownership, but by making payments, as when renting, they will still be relatively young people when the mortgage is burned. There is no doubt in my mind that this couple will succeed.

In seven short years they have invested approximately $45,000 capital and have made outstanding achievements with their dairy herd. Their 335-acre farm now supports 135 purebred Holsteins.

Henry R. Shoemaker, county agricultural agent, says, "I think this young man will succeed because he has an ardent desire to develop and own an outstanding purebred Holstein herd. He is a hard worker, a good manager, and an excellent judge of dairy cattle. His wife shares his ambitions and is willing to work side by side with him to achieve them."

Throughout the United States there are many Roscoe Harbaughs, who upon graduation from F.F.A. and 4-H activities are becoming successfully established in dairy farming. Though the old timers in the dairy business must step lively now to stay ahead of these young farmers they can rejoice, too, knowing that when they retire these young men will very capably take over and keep America the most bountifully-fed nation of the world. **THE END**

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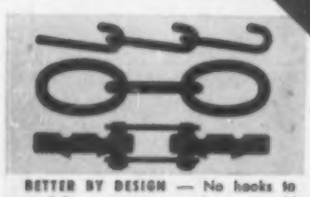

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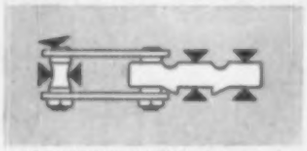

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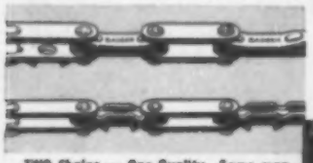

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Green Meadow Sale averages $2,060

The 11th annual Green Meadow Sale, held October 16, at Golden Harvest Farm, Bridgewater, Conn., was the second highest in the history of the series averaging $2,060 for 42 head. It is the highest sale average of the year for Guernseys.

The sale claimed two more top titles for the year; top selling bull and female at public auction. The young bull, Wyno Hamlet's Hornet, sold for $11,000 to a trio composed of Hanover Hill Farm, Yorktown Heights, N. Y.; Deep Lake Farm, Lakeville, Conn.; and Golden Harvest Farm, Bridgewater, Conn.

The top female, Kay-Ron Valencian Doris, consigned by Graysmarsh Farm, Sequim, Wash., was purchased by Howard Quinn, Lakewood Farm, Wauconda, Ill. Quinn was the top purchaser in the sale, taking 22 head for $42,700.

Guernsey milk champion

IDEAL'S BEACON'S ROSETTE, registered Guernsey bred and owned by Jacob Tanis, Ideal Farms, Augusta, N. J., is the new lifetime milk champion for the breed.

In the first 81 days of her 11th lactation, "Rosette" has produced 4,485 pounds of milk and 214 pounds of butterfat. This gives her a current lifetime total of 200,125 pounds of milk, 9,783 pounds of fat in 3,957 days. She is the first Guernsey to exceed 200,000 pounds of milk on official test.

The former champion is Caumsett Ida, with 194,280 pounds milk.

Rosette won the coveted Leibers Trophy in 1959 (based on production), while a paternal sister won the same trophy in 1960. She is sired by Ideal's Beacon.

The dam of two sons and eight daughters, the oldest daughter Ideal's G. S. Rosette has 6 records averaging 18,020 pounds of milk and 1,088 pounds butterfat.

The second daughter, Ideal's L. D. Anna, made a senior 2-year-old record of 15,159 pounds milk, 800 pounds butterfat in 365 days, 3x.

The third daughter, Ideal's Standbest Rosette, has a record of 14,503 pounds milk, 811 pounds butterfat in 365 days, 3x.

The fourth daughter, Ideal's Superior's Rosette, was a class leader in fat as a senior 3-year-old with 14,054 pounds milk, 781 pounds butterfat in 305 days, 3x; and was also a class leader in fat as a senior 4-year-old with 19,074 pounds milk, 1,094 fat in 365 days, 3x.

The fifth daughter, Ideal's Superior's Rosa, has one official record, which was 13,805 pounds milk, 711 pounds fat as a junior 2-year-old in 365 days, 3x.

Following is a list of Rosette's 10 completed records, 365-day, 3x:

Age	Milk	Fat
2-3	13,830	680
3-8	17,382	836
4-11	18,835	911
6-1	19,409	968
7-3	19,031	936
8-5	20,358	976
9-8	20,264	989
10-11	20,919	1,017
12-3	20,542	965
13-0	17,379	828

MERCK

DAIRY CATTLE HEALTH BULLETIN

CAKED UDDER CAN'T BE PREVENTED . . . IT CAN BE TREATED

Caked udder or mammary edema is frequently encountered in high-producing heifers and cows shortly before or after calving.

The painful swelling—which often extends from the floor of the chest to the udder—can result in a serious loss of milk revenue for 1 to 2 weeks or longer. If the condition is neglected, or is a chronic problem at calving time, the udder attachments may break down prematurely and reduce the productive life of a valuable animal.

CAUSE OF CAKED UDDER STILL NOT KNOWN

The exact cause of caked udder is still not known. Most cases, however, are due to the strain placed on the heifer or cow as they prepare for the onset of lactation. The changes in blood protein brought about by the formation of immune bodies for the colostrum or first milk, are believed to be important contributing factors.

NOTE: A change in feeding practices, such as a reduction in grain, will not, in most cases, prevent udder edema. In fact, reducing the grain intake of high-producing animals just after calving may increase the possibility of ketosis or acetonemia.

NEW VETERINARY DRUG PROMISES PROMPT RELIEF OF UDDER EDEMA

Caked udder can now be treated with a new, effective drug, DIURIL® Boluses available from your veterinarian. Ineffective, time-consuming practices such as the use of massage, mild liniments, bag balms, and hot Epsom Salt packs can now be eliminated.

After treatment with the blue DIURIL Boluses, under the direction of your veterinarian, you will probably see and feel a difference in 24-48 hours as the hard, tender and swollen bag becames soft and pliable. Warning: milk taken from dairy animals during treatment and for three days after latest treatment, must not be used for food.

DIURIL Boluses for caked udder or mammary edema problems — before and after calving—are available only through your veterinarian.

Merck Chemical Division, Merck & Co., Inc. Rahway, New Jersey.

®Trademark of Merck & Co., Inc. for chlorothiazide.

Artificial Breeding

Should dairy heifers be bred to beef bulls?

From the evidence that is now available, farmers may be sacrificing more than they think they are gaining.

by H. A. Herman

MANY farmers mate dairy heifers to beef bulls to get a smaller calf and resultant less trouble at calving time. We have no argument with this practice if a dairyman wants a calf he can sell for beef. If he expects to raise his own replacements and maintain his herd size, however, we suggest a second look.

Since Angus calves usually are the smallest of the beef breeds, averaging about 70 pounds at birth, it is common to mate many Holstein heifers to Angus bulls.

The reasons given are three:

1. A smaller calf causes less difficulty at first calving.

2. The calf will be black and bring a better price for beef. Milk cattle with traditional color markings are discriminated against.

3. Since first-calf heifers are a gamble as milk producers, their first calves should not be saved.

Research has been done on crossbreeding and the weights of the resulting calves. We use these findings to answer the three "reasons" enumerated above.

1. How much does the sire influence the birth weight of a calf?

In 1948, Dr. L. J. Cole, University of Wisconsin, and Ivar Johansson, of Sweden, crossed Angus bulls with Holstein cows. They found these calves five pounds heavier at birth than those resulting from a Holstein bull mated to an Angus cow.

This finding suggested that the **breed of the dam has more influence than the sire on the birth weight of a calf.** Every study reported since that time has supported this view.

The earlier study, incidentally, did not reveal any differences in calving difficulty when the crosses were compared.

How about the size and shape of the head? Cole and Johansson reported the long and narrow skull of the Holstein is **dominant** in its inheritance over the shorter, wider skull of the Angus. Thus, any crosses of Angus and Holsteins should result in calves with the long, narrow head of the Holstein.

Let's turn to weights. In a crossbreeding experiment involving Holsteins and Guernseys, Dr. Touchberry, of the University of Illinois, reports the following:

Type of mating	Birth weight of calves
	lbs.
Holstein male - Holstein female	92.7
Holstein male - Guernsey female	76.7
Guernsey male - Holstein female	88.6
Guernsey male - Guernsey female	67.0

Note that calves out of Holstein dams averaged 18.8 pounds heavier than those out of Guernsey dams. Yet calves by Holstein sires were only 6.9 pounds heavier than those by Guernsey sires.

These researchers draw the conclusion that the **breed of dam accounted for** 18.8 pounds, or **73.2 per cent of the difference in birth weight** and **the sire** only 6.9 pounds or **26.8 per cent of the difference.**

No particular calving difficulty with either type cross was noted.

It is quite apparent, from these and other studies, the breed of dam accounts for two-thirds to three-fourths of the birth weight of the calf and the breed of sire only one-third to one-fourth.

The Illinois people found the weight of the calf at birth increased 1.5 pounds as the weight of the dam increased 100 pounds.

The above statements should not lead you to believe the individual sire has no influence on birth weight of calves. There were 16 Holstein sires with 10 or more calves in the Illinois study. The average birth weights ranged from 91 to 107 pounds. Judgment should be exercised in the use of sires that beget extra large calves, particularly in the Holstein and Brown Swiss breeds.

2. Is color an advantage?

A solid black color does have some advantage in selling an animal for beef. So does a white face. There may be a gain of $1 to $3 per hundredweight compared to a typical dairy colored animal.

But the use of Holstein steers for beef production is gaining. In spite of the broken color, a well-fed-out Holstein steer can actually make more net profit than many strictly beef animals.

In the first place, it is not unusual for Holstein steers to gain more than three pounds a day. They cost less to purchase as "feeders." They do bring less per hundredweight on the market, but in many cases the "net" is more. Holstein dairymen should think more about this opportunity.

Beef characteristics and color explain, in part, why over 800,000 milk and general-purpose cows were bred to beef bulls by organized artificial breeding associations last year. This amounted to 12 per cent of the total inseminations. Only a fraction of the services of beef bulls in A.I. studs were to strictly beef cows.

3. Do we need these heifers available for replacements?

One of the serious aspects of breeding first-calf heifers to beef bulls is the reduction in available herd replacements. If all of the first-calf heifers in the average herd dropped crossbred calves, the number available for replacements would be reduced about 20 to 30 per cent. The average cow, in a lifetime, drops about 4.7 calves.

We can figure half will be bulls. (This is an argument favoring beef bulls on first-calf heifers, but it's a 50:50 chance.) When we crossbreed to beef we narrow the great selection potential for herd improvement through breeding.

In about half the herds a dairyman would have to plan on buying replacements just to keep his herd numbers constant.

In summary, if you have a good dairy herd, we urge that all factors be taken into account before crossbreeding to beef bulls. Think about the replacement problem, and let's keep size of calf at birth in its true light. Evidence of the influence of the dam on birth weight is pretty well established.

For the man going "from dairy to beef" we offer no argument. The same can be said of the man with "stock" cows. But the good dairyman should take a second look before he sacrifices the culling opportunities he has with better dairy breeding at his doorstep.

"Artificial calf nursing, artificial milking, artificial sunshine . . . what next?"

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(CANADA: $2.00 per year — FOREIGN: $3.00 per year)

Deal joins Jersey Club

James F. Deal, Knoxville, Tenn., has been appointed area representative of the American Jersey Cattle Club and National All-Jersey, Inc., for Tennessee and Kentucky.

Deal is the first of several specialists to be appointed in a program to expand Jersey promotion.

A graduate of the University of Georgia, Deal was farm manager and assistant professor in dairying at the University from 1948 to 1952; from 1952 to 1960, he was farm and herd superintendent for Mayfield Jersey Farms, Athens, Tenn. Since January 1960, he has been sire analyst and fieldman for East Tennessee Artificial Breeders.

Deal, with his family, will live in Knoxville.

New national class leader

OWEN'S PLACE CHIEF'S MAMBI, owned by Edgar E. Grosse, Glenwood Farm, Goshen, Ind., is the new Guernsey class leader in the junior 2-year-old, 305-day, 2x division. She produced 15,352 pounds milk, 772 pounds butterfat, making her the leader for both milk and butterfat.

Bred by Robert Staner, Bremen, Ind., she is sired by Yellow Creek Noble Chief, a member of the Michigan ABA stud. Grosse is a technician for MABA in the Goshen area.

Blosser named head

DR. T. H. BLOSSER, 41, has been named chairman of the Washington State University Dairy Science Department. A member of the Washington State faculty since 1948, he succeeds Dr. A. O. Shaw, who has resigned to become a faculty member of a new university at Lyallpur, Pakistan, which is being set up under the guidance of Washington State.

A native of Indiana, Blosser received his bachelor's degree from Purdue University and his master's and doctor's degrees at the University of Wisconsin. His research work has been in the fields of animal diseases and nutrition. He is on the official judges' list for the Holstein and Guernsey breeds and is president of the Western Division of the American Dairy Science Association.

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The rate for advertising in this department is 35 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ——, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us one month ahead of date of issue. NEW ADVERTISER MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

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DAIRY AND HOG producing farm in midstate, in heart of canning industry, near towns and cities. 165 acres, rich black crop soil; 86 acres, woodland and pasture with spring fed stream. Adequate good modern electrically equipped buildings, barn cleaner, milk house, 2-car garage. Modern 8-room house, just painted, with electricity and running water, new furnace and roof. MRS. KATE BACKUS, 8236 W. Congress Street, Milwaukee, Wisconsin.

SOUTHWEST MISSOURI dairy farms for sale. Excellent market plus climate. Write or call MOON REALTORS UN 5-6633, 315 East Walnut, Springfield, Missouri. 22-2

160-ACRE FARM complete with machinery, 51 head cattle, feed. Barn: 36x70, silo: 12x42, machine shed: 30x104; 4-bedroom home. Beautiful layout on blacktop. $39,500. Request full details. DAIRYLAND REALTY, Abbotsford, Wisconsin.

ARKANSAS finest dairy farm: 283-acre Grade A. Equipped and stocked with 60 head of good milk cows. Modern home, tractor, and equipment. Tenant house. A bargain here at $40,000. $15,000 down. SAFEWAY REAL ESTATE AGENCY, P. O. Box 234, Salem, Arkansas.

FLORIDA DAIRY FOR SALE. Will sell half interest or entire dairy. Excellent opportunity for dairyman to move to Florida into a prosperous business. Milk selling for $6.91 cwt. now. Top producing herd of 250 cows in Miami milk shed. Call or write for details to DOUGLAS MCLONEY, 333 South Church Street, Cynthiana, Kentucky.

UNBELIEVABLE BUY! Well-stocked, completely-equipped 280-acre Michigan dairy farm going for only $22,000! Includes 28 cows, 10 heifers, 3-unit milker, utensils, 4 tractors, full line implements! Two sets buildings include 8-room and 6-room houses. 215 tillable acres, 30 alfalfa, 100 native pasture. Trout stream. Estimated $1,500 worth marketable timber. In relatively frost-free area, 6¼ miles town. Disabled owner must sell now for only $22,000 complete, good terms. Big free illustrated fall-winter catalog, bargains coast to coast! UNITED FARM AGENCY, 1304-HD Consumers Building, 220 South State Street, Chicago 4, Illinois.

ARE YOU LOOKING for a dairy or cattle farm? Plenty of water and pastures. 638 acres for sale by owner, 12 miles North of Sylvania, 3 miles off of U.S. Highway 301. County road on north and south boundary. 150 acres lowland pasture—Dallas grass and clover; 95 acres of well established Coastal Bermuda; 5 acres Bahia grass; approximately 115 acres cultivated land, some excellent bottom land included; pastures and fields fenced and cross-fenced. Well stocked 12 acre fish pond; 2 flowing wells; 18'x60' concrete silo; tenant houses, barns and pig parlor, some pine and hardwood timber. Also suitable for feedlot operation. Unpaid balance now financed @ 5%. Priced to sell at $110 per acre. Additional acreage available. Suitable dairy herd and milk base can be bought. LOUIS PFEIFFER, P.O. Box 462, Sylvania, Georgia.

HELP WANTED

WANTED: Experienced artificial breeding technicians. Through our frozen semen program and freezers, areas may be developed in any state. References required. Write PIPER BROTHERS FARMS, Watertown, Wisconsin for details. 8-*

WANTED: Man with milk promotion experience. Midwest. Good future for qualified man. State age, marital status, experience, references and salary expected. BOX 736, care Hoard's Dairyman, Fort Atkinson, Wis. 21-2

YOUNG, SINGLE MAN as assistant herdsman for grade Holstein cattle. Pipeline milking parlor and other modern farm equipment. Can start immediately. Give present location, references and phone number. Write FREITAG FARM SERVICE, Box 425, New Glarus, Wisconsin. 21-2

WANTED FOR EARLY 1962. Young, ambitious dairyman to assist manager on one of the largest Holstein farms in the East. Wonderful opportunity for the right man. Requirements: Office correspondences, bookkeeping, records, statistics, artificial insemination desirable. We are willing to train a young man in all phases, willingness is more important than previous experience. Applications with current photo, references, salary requirements to BOX 745, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: Experienced dairyman for 60-cow herd. Must be able to milk and care for cows. Parlor milker. Will lease to right party. No drinker need apply. Position will be open January 1, 1962. BOX 747, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

MARRIED MAN, working herdsman, new loose housing barn, milking parlor. ABE KATZ, East Hampton, Long Island, New York.

WANTED: Family man who is interested in his future. Must manage and milk 40-head registered Brown Swiss. Modern barn. On ROP test. Modern house near large city. If you don't want a permanent job don't apply. Top wages to good man. State references, experience. STATION E, Box 4234, Toledo, Ohio.

FREE USE OF my land, pastures, dairy equipment for your herd. Must have at least 10 milkers. $6.50/cwt. market. No snow. Little or no field work. SUTTONFIELD FARM, Bamberg, South Carolina.

HELP WANTED

OUR FARM was described in the July Farm Journal. Harry Pearson, junior operator, will leave us March 1st for medical reasons. The junior operator is guaranteed $300 per month, plus good house, plus 25% of the net profits. If interested in this position please write fully. FRANK BURGER, Fairway Farm, Oakley, Illinois. 21-2

MARRIED MAN, who knows dairying and machinery, for modern farm. HILLVIEW DAIRY, Route 1, Box 107, Blanchardville, Wisconsin. 22-2

TOP HAND married, or single to batch. Modern dairy, general farming. Wages expected, references in first letter. No drinkers. Chance for advancement. RALPH NULL, Norborne, Missouri.

HERD MANAGER: Large herd, coastal Georgia, must be able breed artificially and keep breeding records. Right man can invest $15,000 after trial. $7.00 milk market. State age, height, weight, family, experience and present salary or job. Write BOX 94, Titusville, New Jersey or phone Pennington 7-1550.

PARTNER WANTED who has 25-50 cows, plus machinery to supply additional milk for wholesale route. We have large modern farm, 50-cow herd, and own pasteurizing plant. Preference given college man. LYNNWOOD FARMS DAIRY, Tebbetts, Missouri.

WORKING HERDSMAN for 60-cow Holstein herd on owner operated farm in St. Louis milkshed. Completely modern working and living conditions. Give experience, references and expected starting salary first letter. BOX 748, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

COMBINATION farm manager-herdsman for modern dairy farm located on city limits of Crystal Lake, Illinois. Top-ranking, purebred Holstein herd, 36-stanchion barn, barn cleaner, pipeline, plus other new equipment. Home is modern 3-bedroom with new central gas heat. Base salary $400 per month, plus home, plus bonus incentive. Start January first. Present manager leaves February first, for own farm. This is ideal place for ambitious young dairyman or first-class older man. Write or phone IVAN HILL, Route 2, Crystal Lake, Illinois.

WANTED near Raleigh, North Carolina, young married dairyman who know dairy cows and farm machinery. Pipeline milking parlor, milking 70 cows. Apply only if industrious, reliable, non-drinker. Give full experience, age of each in family, three references not related, preferably former employers. A future opportunity for a qualified young man who wants a permanent place. BOX 751, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HAVE OPENING for good milker in milking parlor operation. Good salary, incentive plan, good living conditions. BOX 752, care Hoard's Dairyman, Fort Atkinson, Wis. 22-2

POSITIONS WANTED

FAMILY MAN desires work on dairy farm, experience, references. Capable of management. In Northern Illinois or Southwestern Wisconsin. BOX 746, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

YOUNG MAN would like farm job on share basis with retiring farmer. Married, sober, 2 children. Experienced. BOX 749, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

GRAHAM SCHOOL GRADUATE desires position as dairy farm manager. 12 years experience as herdsman. BOX 750, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

SALESMAN WANTED

SALESMEN WANTED: Sell fly sprays, mineral supplements, udder ointment and other agricultural chemicals to farmers or dealers. Old established line. Liberal commissions. W. D. CARPENTER COMPANY, Inc., 111 Irving Avenue, Syracuse 3, New York. 19-4

TAKE OVER YOUR AREA, agents, dealers, farmers, make $250 up weekly selling nationally advertised Campbell's Gro-Green concentrated plant food supplements, increase protein and mineral content of grains and forage. No investment. Credit given. Everything free. Ideal proposition for corn and feed men. CAMPBELL COMPANY, (Est. 1928) Rochelle 60, Illinois. 19-14

SENSATIONAL new longer-burning light bulb. Amazing free replacement guarantee — never again buy light bulbs. No competition. Multi-million dollar market yours alone. Make small fortune even spare time. Incredibly quick sales. Free sales kit. MERLITE (Bulb Division), 114 East 32nd, Dept. C-74L, New York 16. 21-2

OPERATE PROFITABLE BUSINESS in your area. Atrazine, sprayers, fiberglass products. No investment. THE FARMWELL COMPANY, INC., Ixonia, Wisconsin. 22-2

OF INTEREST TO WOMEN

YE OLDE WOOL SHOPPE: Samples sent upon request. Mail orders filled promptly. Regular yard goods, remnants, rug material, coatings, suitings and skirt material. Blankets, ilungs and knitting yarns. KEZAR SALES CORPORATION, Route 25, Kezar Falls, Maine. Telephone Cornish 323. 21-2

MISCELLANEOUS

HOW TO TRAP SPARROWS and starlings with famed, "Black Lily" elevator traps. New information everyone should have. It's free. Simply address, SPARROWTRAPS, 605 Detroit Lakes, Minnesota. 21-*

DOGS

SHEPHERDS, COLLIES. Outstanding Heelers. Watch Dogs. ZIMMERMAN FARMS, Flanagan, Illinois 2-*

FOR SALE: Nice Border Collie puppies. LESLIE DAY, Fly Creek, New York.

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

Handy Hints

SNOW PLOW ATTACHMENT

No need to take off the manure scoop to put on this snow plow. It's a "fast hitch" job that mounts on the tines of the scoop and bolts to the hopper of the bucket. The plow is homemade from a section cut from an oil storage tank and "framed" with a 2-inch gaspipe. A channel iron backs up the bottom and a piece of road grader blade is used for cutting on the leading edge.

Illinois — C. F. MARLEY

CALF PENS . . . IN HEN HOUSE

We converted our hen house into a calf barn. We built 10 pens, 4 feet wide, 4 feet deep, and 3 feet high. Stanchions were built of wood with a grain box, and a water pail holder was added to the front of each pen.

The windows along the south side of the building help to keep it warm during cold weather. This low-ceilinged building is a good place to start young calves.

Kansas — ELLI MEYER, JR.

WORKBENCH FROM SCRAP METAL

A bench that will "stand up" can be constructed of 1¼-inch pipe for the legs and 3- by 3- by ¼-inch angle iron for the frame. Make the top of 2-inch planks attached to the metal frame with bolts. Countersink the bolt heads in the wood so they will not protrude above the top.

Make sure the legs are exactly the same length so the bench will rest solidly on a flat floor.

This bench is 29 inches wide, 56 inches long, and 31 inches high.

A bench of this type can take a heavy load without damage.

Minnesota — D. W. BATES

SILAGE TRAILER

A rear axle from a two-ton truck was used as the running gear for this silage trailer. Tires were put on the outside rims and a steel car frame was welded to the axle.

The trailer tongue is made from a piece of strap iron 2 inches wide and ⅛ inch thick, bent to fit the drawbar on the tractor.

The floor of the box is made from 2 x 6's bolted to the car frame. The box is 6 feet wide, 14 feet long, and 4 feet high.

The trailer is used for hauling silage from a trench silo located one-half mile from our feed bunks in the barnyard.

Texas — BOB TRAWEEK

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

FOR SALE: Registered Airedale puppies. The dog that is more than a pet. LESTER GARDNER, Route 2, Box 190, Lewisburg, Ohio.

SWINE

FOR SALE: Wisconsin feeder pigs, 40 to 60 lbs. Sold direct from farmer to farmer on weight basis, no sale barn pigs. $14 for 40 lbs., 10 cents a lb. above or below 40 lbs. making 41 pounders $14.10 delivered price. CLARENCE ACKER, Middleton, Wisconsin. TE 6-3451. 21-*

DAIRY CATTLE

NOTICE TO BUYERS — WHEN BUYING DAIRY CALVES OR DAIRY CATTLE, inspect and select cattle personally. If impossible, have them checked by someone in whom you have confidence. Complete understanding in writing between buyer and seller is very important. Should you buy on approval, it is advisable to have animals inspected by veterinarian on arrival before acceptance. Report serious health problems to your state veterinarian. — Hoard's Dairyman.

CHOICE SELECTION of Holstein dairy cows and heifers, fresh and close springers. T.B. and Bang's tested. Calfhood vaccinated. Registered bulls service age. HARTMAN & SON, Hampshire, Illinois. Phone 2621. 2-*

ATTENTION DAIRYMEN and Cattle Dealers: Indiana's largest selection of grade and purebred Holstein cattle, bred for production and show type, will sell one or 500. We will ship subject to approval. Cattle eligible for any state. Vaccinated, TB and Bang's accredited. Terms to reliable parties. BOTTEMA FARMS, Rural Route #2, Box 206, Indianapolis, Indiana. Phone TE 9-6575. 12-*

CANADIAN HOLSTEINS direct from the farms. Registered, T.B. and Bang's certified. MIDDLESEX HOLSTEIN BREEDERS ASSOCIATION. Phone Lambeth OL 2-9616. Hardy Shore, Glanworth, Ontario. 15-*

FOR SALE: Buy your vaccinated dairy cows and heifers direct from the farmers where quality prevails. GEORGE E. SWANSON, Rice Lake, Wis. Phone CEdar 4-4717. 6-19

FOR SALE: High quality Holstein heifers, calfhood vaccinated, TB tested. NATIONAL DAIRY RESEARCH FARM, P. O. Box 143, phone Hickory 2-1940, Danville, Illinois. 20-6

WISCONSIN HOLSTEINS for the Southern States. Guernsey, Jersey, Brown Swiss. Cow sized heifers my speciality. Financed. Call P. R. ELAM, Marshall, North Carolina, phone 3451, or Mars Hill, North Carolina, 2381 nights. 14-*

HOLSTEIN COWS and large heifers. Some calving every day, close up and later. You won't find as many good uddered and quality cattle on hand anywhere. Save time and expense. HARRY BIRGER DAIRY CATTLE COMPANY, Rosemount, Minnesota. GA-3-4521. 14-10

KENYON BROTHERS FARM serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls. T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone SHerwood 1-1818. 19-*

REGISTERED HOLSTEINS: A few service age bulls, some younger males, foundation females and heifers. Nearly all sired by excellent sires and from classified dams with HIR records. SanMarGale FARMS, Box 265, Lebanon, Ohio. Phone 5-2606. 23-*

KEATING BROTHERS FARM offers large selection fresh and springing selected cows and heifers, tested and vaccinated. Buying on order saves time and money. Call or write FORT ATKINSON, WISCONSIN. Telephone JOrdan 3-2908. 21-*

DAIRY CATTLE SALES, every Thursday, April through October. Top springer cows and heifers. 400 to 600 head every sale. MATTES LIVESTOCK MARKET, Thorp, Wis. 10-*

REGISTERED HOLSTEIN bull calves, one month to ten months of age, all from Very Good dams with 700-800 pounds of buttertat. Sired by Excellent Silver Medal type sire, Rock River Count. Rock River Count's Jr. two-year-old daughters average: 12,534 milk, 4.2%, 522 fat; increase over dams: +91 milk, +.5%, +63 fat. Write for further details to: B. B. McLAUGHLIN, Rock River Farms, Byron, Illinois.

25 OCTOBER FRESHENING heifers. 25 open year old heifers. WM. CLOW, Plainfield, Illinois. General 6-6629. 21-2

DISPLAY

DAIRY CATTLE

WISCONSIN DAIRY COWS — I am handling good-producing dairy cows for improvement to your dairy herd. If you are interested in a higher milk producing herd, I can supply you with all the good dairy cows you need. Arrangements can be made to make delivery of these cows anywhere in the United States or abroad. Office headquarters are at Columbus, New Jersey. Always a large selection on hand. Write or call REUBEN GREENBERG, Columbus, New Jersey. "A good deal for every dairyman." Mailing address Reuben Greenberg, Columbus, New Jersey—phone Bordentown, N. J., AXminster 8-1021. 20-opl.

LARGE SELECTION artificially sired, bred and open heifers. Home raised. Write or call KURT GRIEBENOW, Route 2, Watertown, Wisconsin, 9665R1. 20-opl.

CANADIAN Registered Holsteins. Young vaccinated cows and heifers. Buy direct from the farms. Elgin County Holstein Breeders Club. Telephone Talbotville, Ontario 6-R-12. DON SHORE, R.R. #6, St. Thomas, Ontario, Canada. 7-*

FOR SALE: Holstein springing heifers and cows. Good selection of open and bred heifers. R. B. BRICHER, St. Charles, Illinois. Phone JU-4-2347 days, JU-4-2895 nights. 7-24

HIGH QUALITY Holstein and Guernsey springers and heifers all sizes. J. W. & BILL GEURKINK, telephone 332 or 21F31, Baldwin, Wisconsin. 15-*

BEEF CATTLE

CHAROLAIS PUREBRED. Females, bulls, Foundation herd quality. Imported Yates bloodlines. BILL LAMME, Laclede 17, Missouri. 22-*

DISPLAY

A NEW TRI-STATE SERVICE

For Dairyman — For Dairyman

Dairy Cattle Replacement Marketing. Sell 't your Replacement Cattle from over 30,000 dairymen! We handle only quality cattle. All breeds.

A.I.— GRADES — REGISTERED

Fieldmen Service — Commission charge of $5 on all orders over 10 animals. $10 on orders less than ten animals.

FOR INFORMATION, CONTACT — Wayne L. Wendorf

TRI-STATE BREEDERS COOPERATIVE

Westby, Wisconsin — Phone 93

WISCONSIN DAIRY CATTLE

Midwestern Dairymen ! ! !

Fine foundation **SPRINGING heifers, yearlings, cattle of all ages.** These are sold on commission basis to you. We have buyers throughout the northern dairy states and can supply the finest for the best possible price. One of the midwest's largest dealers serving dairymen for the past 8 years. We will deliver C.O.D. to your farm by our experienced drivers. We are moving 300-500 head per week.

WE FINANCE - UP TO 24 MONTHS TO PAY

DENNIS R. GROSSE

PHONE 1419 YORK, NEBRASKA BOX 48

AYRSHIRES

REGISTERED AYRSHIRE BULL 15 months old, sired by double approved sire and dam's record 16,880 M, 850 F. We also have one month old bull calves reasonable.

GREENFIELD FARMS

Route 2, Box 63 — Mukwonago, Wis.

NOW YOU CAN BUY

POLLED AYRSHIRE BULL CALVES

That are from high producing families
That are of Carefree Farms & Penshurst Breeding
That give you excellent type calves
That are priced at prices sure to please

WRITE FOR PEDIGREES AND PRICES
CAREFREE FARMS NEW HAVEN, INDIANA

THE NEW AYRSHIRE LOOK

GREATER PRODUCTION PROOF

ACTUAL 2X 305 DAYS

SHAGBARK RHODA—1024 F.
20,605 M. at 8 yrs. Pictured here.

CRYSTAL SPRING BEVERLY H.B.—
24,630 M. 911 F. at 7 yrs.

GREEN VALLEY RAFF INCENSE—
21,255 M. 916 F. 4.3% at 7 yrs.

VALHALA HANNAH 2nd—20,616 M.
916 F. 4.4% at 4 yrs. 4 mos.

GREATER PROFITS — **Noted Longevity with Lower Replacement costs — Economical converters of feed to quality milk — Regularity of calving — Lower Veterinary costs — Udders strongly attached.**

GREATER OPPORTUNITIES — **For Net Profits — For Milk that suits the Market — For Sales**

Write: AYRSHIRE BREEDERS' ASS'N., 10 Center St., Brandon, Vt.

NOTICE TO BUYERS

WHEN BUYING DAIRY CALVES OR DAIRY CATTLE, inspect and select cattle personally. If impossible, have them checked by someone in whom you have confidence. Complete understanding in writing between buyer and seller is very important. Should you buy on approval, it is advisable to have animals inspected by a veterinarian on arrival before acceptance. Report serious health problems to your state veterinarian.

— Hoard's Dairyman.

JERSEYS

I have choice high grade bred Jersey and Guernsey heifers, also fresh and springer cows. All T.B. and Bang's tested. Come and make your selection, or will fill your order or help you buy. Phone University 5-4113. **CLAUDE THORNTON, Route 2, Box 236, Springfield, Mo.**

JERSEY AND GUERNSEY HEIFERS

Heavy springers, bred or open. Also Jersey and Guernsey cows, fresh or springers. 250 to 300 head on hand at all times to choose from. Mostly calfhood vaccinated. All animals shipped by Federal regulations of your state. I deliver. **ELLIS W. TAYLOR,** Route 1, Strafford, Missouri. Phone RE 6-2755.

TYPY

Production Bred Bull

from a heavy producing cow family. His maternal sister, dam and maternal grandam av. (mature equivalent) 13,391 M, 759 F. Sire: Brampton Belles Record, EX. 129 cl. daus. av. 87.29%. 71 tested daus. av. 10,653 M, 568 F.

PIXY FARM Hudson, Wis.

Brigham Jerseys

Potential Galore!

Cow Power Aplenty!

A Pedigree of Great Promise!

TATTOO U 35

BORN JULY 31, 1961

He is by Champion's Plutocrat

By Tristram Champion out of "Pearl," Excellent, three times 1000 lbs. fat and top Ton of Gold producer

He is out of Sybil Owl Blenda

A Triple Ton of Gold, Tested Dam with a lifetime total of 162,943 lbs. milk, 7,615 lbs. fat.

THIS KIND SELL QUICKLY YOU SHOULD OWN HIM

WRITE TODAY

BRIGHAM FARM ST. ALBANS, VERMONT

GUERNSEYS

PUREBRED GUERNSEYS

Choice well bred heifers and young cows due November through February. Also heifer calves and yearlings. By proven sires and from great cow families. Herd production tested for over fifty years.

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SMITHVILLE FLATS, N. Y.

GUERNSEY *SALES SERVICE*

Six fieldmen of the largest Guernsey Association in the nation are fully acquainted with cattle for sale in Pa., Del. and Eastern States. We have private listings at all times, also regular monthly sales. If you need one, or a car load, write for prices — get quick service. If you want to sell, contact us — low selling charge — prompt payment.

Often requests for cattle come from all over the United States. It may be from your next door neighbor! Send us your listing so we can tell the prospect nearest you.

Pa. Guernsey Breeders' Ass'n.
P. O. BOX 302 CAMP HILL, PA.

BROWN SWISS CATTLE

Letha Irene Pride

170154

owned by

Mr. & Mrs. Henry C. Woods, Jr.

White Cloud Farm Princeton, N. J.

THE BROWN SWISS CHAMPION FAT PRODUCER

11 yrs. 5 mo.	365 Days	3X
34,810.9 Milk	4.98%	1733.13 Fat

A World's Champion - - - For the Brown Swiss Breed

— BREED BROWN SWISS FOR GREATER PROFITS —

FOR MORE INFORMATION ABOUT THE BREED-WRITE:

BROWN SWISS ASSOCIATION BELOIT, WISCONSIN

PROMISING GUERNSEY BULL CALVES

Several youngsters sired by Dairyman F's Jado, Elmwood Dairyman Triumph or one of our junior sires. All out of good producing dams with good type. Here is your chance to get a young sire possessing bloodlines bred proven for profitable production. Priced to sell quickly.

Write for descriptions and prices, or come and pick one out.

HOARD'S DAIRYMAN FARM
FORT ATKINSON, WIS.

HOLSTEINS GUERNSEYS

Large selection of high grade cows and heifers of all ages. Calfhood vaccinated — lab. tested. We feed well balanced roughage for top production and size. Buy direct and save. Experienced insured transportation.

LAKESIDE DAIRY FARMS
Quality Cattle Since 1929
Silver Lake, Indiana Telephone 3501-3304

GRANDVU GUERNSEYS — Choice young bulls and heifers, all ages. Blue Ribbon Type plus production breeding. From 2 great Proved high index sires. Flying Horse Masters Royal, Greenfield Music Maker. Foundation Club Calves. The right kind at the right price. Write or come to Grandvu Farms, Wrightstown, Wis.

GUERNSEYS

Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Lee Burlingham, fieldman, at your service. **Waukesha County Guernsey Breeders' Assn., Waukesha, Wisconsin.**

HOLSTEINS

Purebred registered Holstein cows, heifers and service age bulls. These are top quality cattle bred and raised on our farm. Years of testing DHIA, calfhood vaccinated, TB and Bang's free. We will deliver. For more information call or write CARL MEDSKER, phone 2-3319 or 2-3087 Graysville, Ind.

MEDSKER FARMS SULLIVAN, IND.

REGISTERED HOLSTEIN COWS and heifers. Calfhood vaccinated. Largest herd of registered Holsteins in America. Our prices are very reasonable and we deliver anywhere. Everything guaranteed exactly as represented. See, write or call us before buying dairy cattle of any kind. Visitors always welcome.

GREEN MEADOW FARMS Elsie, Michigan

FREE FACTS

on How to Succeed in Modern Dairying with

REGISTERED GUERNSEYS

— Today's Best Choice for Highest Net Income

Adaptable, efficient Guernseys earn highest net income. Here are some of the reasons.

- ***Guernseys*** **excel in the ability to convert hay, pasture, silage and grain into the world's finest milk.**
- ***Guernseys*** **fit today's modern dairying methods . . . this means more efficient use of labor, feed and space in the barn and at the feed rack.**
- ***Guernseys*** **produce the finest milk. Guernsey milk is always in demand by distributors because it has high solids-not-fat, protein, Vitamin A and mineral content. Guernsey milk is world renowned for its delicious flavor and unique golden color . . . which assures consumer acceptance. Remember, distributors pay producers on the basis of total solids—*not on pounds of milk alone!***
- ***Guernseys*** **are easily handled.**
- ***Guernseys*** **are the earliest maturing breed, bringing you profits sooner and returning higher lifetime income.**

Add all these important *Guernsey Plus Factors* together and you'll see the reason why the Guernsey breed adds up to highest net dairy profits.

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FREE FACTS — write today

THE AMERICAN GUERNSEY CATTLE CLUB
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☐ **Send FREE information on how to start a Guernsey Herd, and a copy of "Profitable Dairying."**

☐ **Send FREE information about extra profits selling nationally advertised Golden Guernsey Milk.**

NAME _____

ADDRESS _____

TOWN _____ STATE _____

SON OF GRAYVIEW SKYLINER EX, GM. Born October 12, 1960. Nice type, mostly white. His VG dam has 500 F at 3 yrs. and is now milking 80# daily at 4 yrs. Granddam VG, 602 F, 21,411 M. Great granddam VG, GM dam. She heads a 3 generation GMD group, one of 4 such in U.S. This is a family of large cows whose production improves with age. Herd av. for 4 yrs. 581 F. Most recent ol. 105.6% BAA. Robert Thomson, Jr., phone UN 4-1004. **ROSTHOM HOLSTEIN FARM, Route 2, Box 264, Springfield, Mo.**

LINMERE PONTIAC VIVIAN EX

2-2	2x	365d	12,327	581	4.8% HIR
3-5	2x	306d	11,089	519	4.3% HIR
5-6	3x	365d	20,522	839	4.1% AR
6-7	3x	332d	14,197	580	4.1% AR

OFFERING A BUTTERBOY SON FROM THIS EXCELLENT COW

Linmere Pontiac Vivian has an outstanding pedigree. Her sire, Carnation Ormsby Pontiac Imperial, is an EX 8M Production sire. He is also the sire of the famous EX 1,180 lb. producer Puget Sound Pontiac Peaches.

Vivian's dam is a VG dau. of Hallrose Ranger an EX GM son of Hallrose Progressor who is also EX GM. The next dam is a VG dau. of Hallrose Hazel Inka, a VG GM sire, who, in turn, is a son of Hallrose King Hazel an EX GM son of EX twice All-American Ormsby Aaggie Tilda the dam of Carnation Black Magic.

Vivian's son, Ear Tag B-702, was born September 2, 1961. He is 80% white and is a big, long bodied, broad rumped calf.

Write for pedigree, pictures and price.

Carnation Milk Farm

Address:
CARNATION MILK FARMS
Dept. #215
Carnation, Washington

This month we offer Stoffell Knight, born Feb. 25, 1961. His dam is a Carnation Bracelet Homestead dau. that produced 2,400 M and 800 F as a 5-yr-old. His sire is a Wis Spotlight son that has been Grand Champion at three State Fairs this fall. He is bred to be a great sire.

For price and pedigree write:

STOFFELL'S MILK FARM
Route 12 Knoxville, Tennessee

LAWARA HOLSTEIN HERD TO BE DISPERSED

Interlaken, N. Y. DEC. 8

130 HEAD of outstanding Rag Apple bred females in this important dispersal.

Included are four bulls, one of the year's most significant bull buying opportunities.

SEILING REFLECTION ECHO, EX, 5-yr-old son of ABC Reflection Sovereign that was Reserve All-New York aged bull in 1960. Owned jointly with Allen F. Jones, Jamestown, N.Y. where he was used first (oldest dams now in milk). At Lawara there are 47 head in calf to him and the first ones are now arriving. His dam, Seiling Wing Wayne, VG, is a 100,000 lb. producer with top records of 781 and 746 F. Echo has been used extensively on Sovereign-bred cattle and has never sired a red calf.

COUNCIL ROCK STYLEMASTER, 8-yr-old herd sire sells with 21 daus., calves to bred heifers. Son of Council Rock Worthy Barbara, EX, with 2x records to 922 F, 4.3%. His stablemate comparison is a rare one:

19 Daus.	14,866	3.7%	555
19 Mates	13,950	3.6%	508
	+ 916	+ .1%	+ 47

LAWARA WORTHY VICTOR, yearling son of "Stylemaster" out of Milbrofar Montvic Nudine, VG-87, with 2x records to 813 F. Also two of his maternal sisters are selling, one 2-yr-old by "Duke Mark," fresh in Sept. and a 2-yr-old by Quin-Lynn Duke of Lawara fresh in Oct.

SON OF SHEFFIELD PAULETTE BREEZE, VG, "Breeze" was purchased at the Sheffield Farms dispersal to be the dam of a future herd sire. Her Sept. bull calf by Echo was the bull we wanted, now he can be yours!

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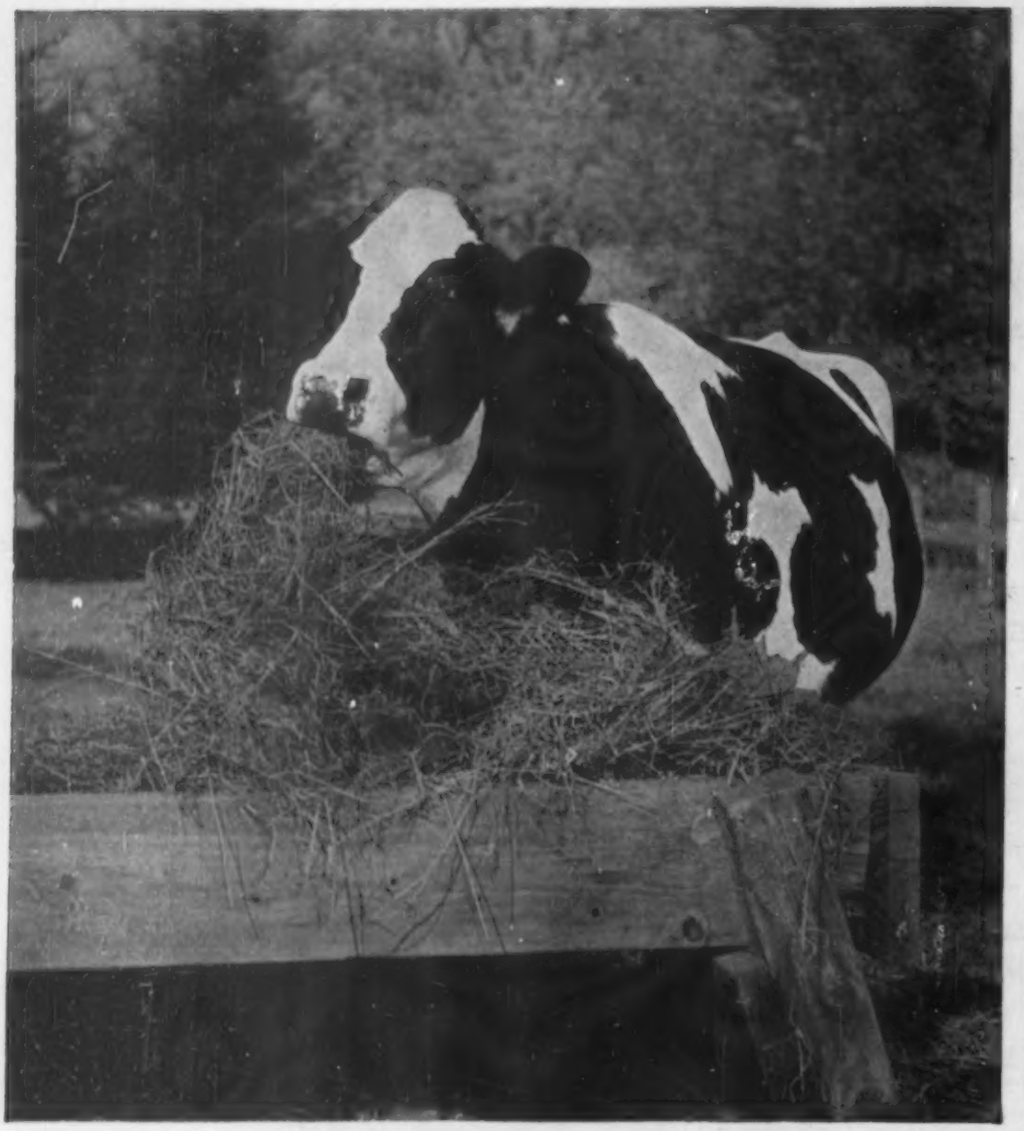

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Registered HOLSTEINS *Breed of the Times*

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BRATTLEBORO, VERMONT

"Clip Coupons" Through Herd Record Keeping

"Sure, I'd like to switch over to registered Holsteins. Just don't have time for the paper work, though."

You've heard grade herd dairymen say things like this. Maybe you've made similar statements yourself.

On the other hand, however, you've never heard of an investor too busy to clip coupons. And you never will!

What's the connection? Simply this: Any dairy farm is a big investment these days. And the Holstein-Friesian certificate of registry is a blue-chip security.

Every time you register a purebred Holstein calf, you "clip a coupon" — bank an extra dividend on your investment in dairy farming.

There are no such extra dividends with a grade herd. Accordingly, the financier too busy to clip coupons and the dairyman without time for record keeping have much in common.

Yet the "bugaboo" of record keeping, too often at face value, is frequently the only factor preventing a good dairyman from investing his capital where the promise of big returns is greatest — in registered Holsteins!

Actually, the "bookkeeping" required of the individual Holstein breeder is simple — just the basic records needed to manage any dairy herd intelligently.

But every time the Holstein breeder registers a calf he "clips a coupon" of extra profit — not only on his investment in seed stock but on every dollar and every hour invested in his operation!

Sales the country over tell the story — in terms as clear and as unmistakable as the financial page of your newspaper. A registered Holstein is worth at least $100 more than a grade in the same age bracket.

Yet a registered Holstein costs no more to raise. Even the few minutes it takes to keep herd records up to date can't be classified as an "extra" in most cases.

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Remember, it's never a chore to keep track of extra profits. And registered Holstein record keeping provides the means of "clipping coupons" — every time you register a calf!

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SELLING: 20 close and fresh cows with records to 600 F.

10 HEIFERS ready to breed or just bred from dams with records to 650 F.

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Select foundation Holstein Cows and Heifers with Production, type, and size from our Foundation Wisconsin Herds. Artificial Breeding. Calfhood Vaccinated, Bangs and T.B. Tested.

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Plan to come and select your Wisconsin Holstein or we will buy on order at your direction. Fieldman service write or phone.

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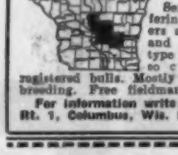

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MONDAY DEC. 11, 1961

Mark your Calendar for the Dispersal of the MILKING HERD and ALL BRED HEIFERS (retaining only 4-H Club Projects and Open Heifers same age as 4-H Projects).

WALLACE KLINGENBERG'S WAL-WIN-J HERD
OKAWVILLE, ILLINOIS

60 REGISTERED HOLSTEINS

35 MILKING AGE
25 YOUNGER FEMALES

30 to freshen from October through January, including the entire Show Herd that has been so successful in past years.
This herd represents 40 years of breeding, and is today at its peak. SIRA bulls have been used most successfully.
Cows selling with records up to 639 F, 15 with over 500 F, many young cows showing exceptional promise. DHIA Records for 9 years with Herd Averages up to 12,387 M, 490 F.
One of the outstanding herds to be dispersed this year in Illinois.
Moving from the present dairy equipped farm forces this herd to be dispersed. Plan now to attend!

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NATIONAL ALL-AMERICAN SALE

ELKHORN, WISCONSIN FAIRGROUNDS

MONDAY, DECEMBER 4 11:00 A.M.

HOLSTEINS *of All-American Caliber & Heritage*

Featuring:

WIS ROMEO, Jan. 19, 1961 son of Moosheart Pioneer, EX, twice All-American, and Wis Repose, EX-93, 6 times over 700 F, one of three EX daus. of Wis Prima Donna, EX-GMD, who has 877 F. Wisconsin State Reformatory.

MAYERS CAPITAINE BLACK PRINCE, Oct. 27, 1960 son of Marsden Black Princess, E-94, All-American 4-yr-old with 763 F. She is scored 30 points on Mammary System, one of the very few if not the only cow of the breed with a 30 point udder. He is sired by Roamdale Capitaine, son of "Maple" from the 1117-lb. Mahoney Babe Lochinvar, EX. Christ Mayer & Sons.

CASH-MAR REFLECTION MILLY, Junior Champion female at Waterloo this year and undefeated at the major shows. C. M. Bottema, Jr.

AND, Future Hope Faith Rogel, Junior Champion at the 1961 Wisconsin State Jr. Fair, Harold Draeger & Sons; a dau. of Weber Admiral Burke Ruby, EX-93, Grand Champion, Wisconsin State Fair in 1955 with 140,000 M, Bristol Farm; a 600-lb. 3-yr-old dau. of Lange Re-Charity Dean Walker, Francis Webb & Sons; a big 2-yr-old dau. of Hilltop Transmitter Great, EX, twice All-American, from a VG-89 dam with 710 F, Chambric Farms; the 2nd prize Jr. Yrlg. heifer at Waterloo & Wisconsin sired by Wis Double Victory from a dau. of Hayssen Hi Hope, Lakeside Farm; a 2-yr-old dau. of Gray View Skyliner, EX-GM, from a 715-lb. VG dam, Harvey A. Nelson & Sons; a dau. of Admiral Comet, EX-GM, from a member of the 1952 All-American "Produce," Pinehurst Farms; a dau. of Kyland Premier, EX-GM, from a 100,000-lb. VG dau. of Kyland Gallant Lad, VG-GM; and many other outstanding cows and heifers including EX-91 cow from Forrest Seward.

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A Vest Pocket Herd Book Is a Good Investment

Veterinary Column

by E. A. Woelffer, D.V.M.

Nosebleed in cattle

During one of the state fairs, we were called to see a show bull that was bleeding quite profusely from both nostrils. The bull stood on the end of the line and had become excited, possibly from the crowd. The temperature of the barn was high and the weather was humid. Ventilation was poor.

The underlying cause of the bleeding wasn't determined, although we believe the excitement and hot weather were contributing factors. Following injections of a blood coagulant and tranquilizer, the bleeding soon stopped and the animal became quiet.

Nosebleed is not common in animals. When it occurs, it usually is not serious. Of course, bleeding occasionally is severe. It is seldom fatal, except when there is erosion or eruption of a large blood vessel in the respiratory tract.

When the bleeding is from one nostril, it usually is an indication that the source is somewhere in the nasal passages. If bleeding is from both nasal openings, the source is more likely to be from the bronchi or lungs.

Local bleeding may be from injuries of twigs, sticks, or other foreign bodies which become lodged in, or are forced up in, the nose. If there is considerable injury to the tender tissue, bleeding will occur along with thickening of the membranes. This may temporarily reduce the size of the air passageways and cause difficult breathing.

Sometimes growths develop which cause bleeding. Usually there is slight bleeding when the turbinate bones are inflamed. Light fractures at the base of the skull sometimes occur following fighting. If hemorrhage takes place, it may be through both the nose and the ears.

Infections present . . .

Nosebleed sometimes occurs when there is general infection, or when intoxication or poisoning is present. Some of the more common general infections which may cause nosebleeding are anthrax, blackleg, septic metritis, sweet clover disease, and mercurial poisoning.

Bleeding often accompanies heatstroke or follows extreme exertion on a very hot day.

Depending upon the source, blood from the nostril may appear in droplets, as a thin stream, or in the form of froth.

Frothy blood usually originates in the lungs but blood without foam does not necessarily mean the lung is not involved. This is particularly true when the animal is quiet. If temperatures are high, poisoning or septicemia is likely to be the cause of bleeding.

Treatment . . .

When bleeding is noticed, place the animal in a comfortable stall or other suitable place out of the hot sun. Bleeding often stops when the animal becomes quiet. If bleeding persists, call your veterinarian. He may find it necessary to pack the nostrils with a tampon and/or administer anticoagulants.

If severe bleeding from both nostrils occurs, packing of both openings is usually necessary. Temporary installation of a tracheotomy tube in the windpipe may be necessary until normal breathing is re-established.

JOHNE'S DISEASE

I would like some information on Johne's disease.

Some people say there is no cure and young animals do not grow up with an immunity to it. Others say they do.

Canada **J.G.**

Treatments for Johne's disease have not been successful. The antibiotic streptomycin has shown the most activity against the organism but frequent injections over a period of time have shown only transient improvement. Calves do not ordinarily develop an immunity to the disease.

Vaccinations will reduce the rate of spread and in that way help to eradicate the disease in a herd. Since complications may develop from the use of vaccine, there is local legislation against its use in some areas.

The absence of accurate tests and long incubation periods tend to make Johne's disease difficult to recognize and control.

OPENING IN SIDE OF TEAT

We have a nice first-calf heifer with a small opening in the side of one teat. It is about half the size of the opening in the end.

Is there any treatment we could use to close this opening, as milk comes from it while she is being milked?

Fallon, Nevada **A.O.**

Removal of the small opening in the side of the heifer's teat can be done by your veterinarian. One method is to make two elliptical cuts down to the mucous membranes of the teat on either side of the opening. The loose tissue is removed and the wound is sutured.

BUY GET FREE

Right now, your regular supplier of mastitis products is able to offer you one FREE tube or syringe of AUREOMYCIN® for Mastitis (or TARGOT®, if you prefer) with each five that you purchase.

In addition, with each special, banded package of six tubes or syringes, you will receive six "Treated-Cow" stickers. They stick to the cow's hip on contact, show when she was treated for mastitis and how long milk is to be withheld. You'll find these mighty handy!

This is the time of year when mastitis is most troublesome. Why not lay in a stock of AUREOMYCIN for Mastitis (or TARGOT) right now?

See your dealer for your "1-FREE-with-5" package today. That's your bonus for buying now and being ready when those flare-ups occur. American Cyanamid Company, Agricultural Division, Princeton, N. J. ®AUREOMYCIN *is American Cyanamid Company's trademark for chlortetracycline.*

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—SAYS HARRIS S. HORN of CREEK AYR FARMS
Dover, Pennsylvania

WHO WON HIS SECOND CONSECUTIVE BLUE RIBBON MILK AWARD at the 1961 PENNSYLVANIA FARM SHOW

Pictured below are three of the operators of CREEK AYR FARMS; Mr. and Mrs. Harris S. Horn and son, Ronald, and two of their Champion Ayrshire cattle.

"I JUST TURN A SWITCH—AND OUR ZERO BULK MILK COOLER WASHES, RINSES AND SANITIZES ITSELF"

Cleanliness is the secret of high-quality milk — according to Harris S. Horn. He says: "We have found that having healthy cows, clean surroundings and consistently clean equipment assures us top quality milk.

"We have had a Zero tank four years. I chose the Zero because of the simplicity of installation, elimination of an expensive releaser or pump and the way the vacuum eliminates odors in our milk. Our Zero takes less space in the milk house, and is the easiest bulk tank to wash thoroughly clean of any I have ever seen. Our present, completely-automatic Zero tank, with its built-in, Time-Cycle Spatter-Spray cleaning enabled us to produce Blue Ribbon Award milk." Harris S. Horn

BIG TANK FITS INTO SMALL MILK HOUSE!
This ZERO is the BIG-SHORTY model. Enables you to install a larger-capacity tank without enlarging milk house.

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There's only *one* bulk milk tank with a *completely-automatic, entirely-built-in self-cleaning and sanitizing system!* It's the new ZERO T-20 *COMPLETELY-AUTOMATIC* VACUUM BULK MILK COOLER.

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This ZERO greatly reduces milk-handling costs... assures higher-quality milk... and bigger milk profit!

EVERYTHING BUILT-IN! — This is a complete self-cleaning system. Everything — including the controls, electrical system, and even the detergent jar — is built in. There's no conglomeration of makeshift gadgets to connect, insert in tank, remove, disconnect, wash and store away every clean-up.

ELECTRICAL SYSTEM BUILT-IN FOR SAFETY — Designed with its electrical system *entirely built-in* — the ZERO *prevents* possible electrical hazards that might be caused by a wet milk house floor, wet shoes and damp equipment. *The ZERO is the only farm bulk milk tank that has a safe electrical cleaning system.*

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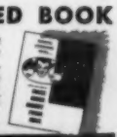

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NAME.....

SIZE OF MY MILK HOUSE.....

ADDRESS.....

TOWN..... STATE.....

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38

IF IT ISN'T A Zero... IT ISN'T COMPLETELY AUTOMATIC!

CHORE-BOY NEWS

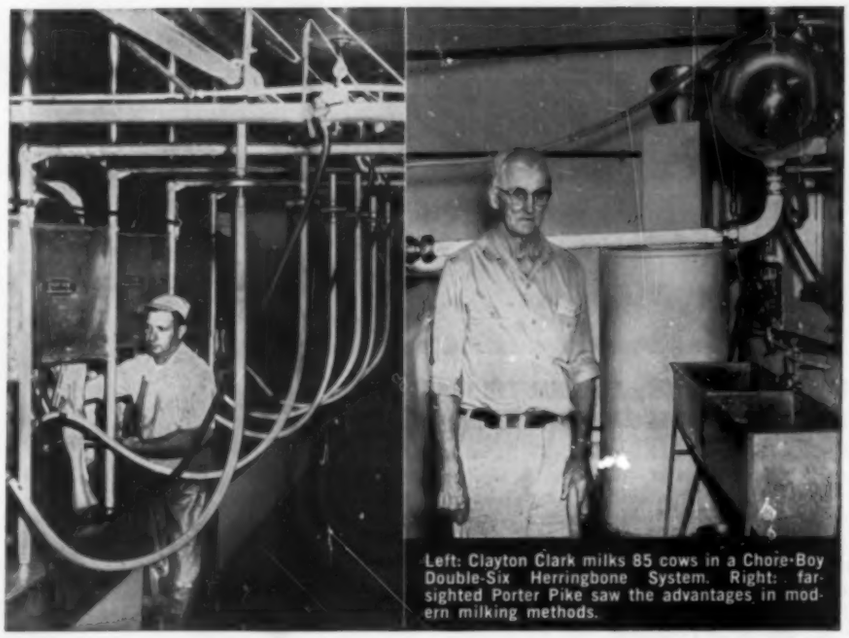
Volume 1, Number 1

81-year-young landlord makes a good tenant happy!

Ten years ago Porter Pike made arrangements with J. Clayton Clark to operate the Pike farm on a share basis. Located at Centerville, Indiana, the farm had a herd of 19 milk cows. Five years ago four Chore-Boy side-opening parlor stalls, using a Chore-Boy low-vacuum pipeline system, were installed.

Clayton Clark proved to be a top dairyman, expanding the herd to a total of 100 cows, 85 of which are milked throughout the year. While the herd increased, however, the old milking facilities grew less and less adequate. Finally eight hours a day were devoted to milking alone. Cows were held in pens for as long as four hours, waiting to be milked. Ultimately, the point was reached where either the herd had to be cut back or the system enlarged.

Mr. Pike, with vision and optimistic outlook quite unusual in a man of his years, decided to take the progressive course. He installed a Chore-Boy Herringbone Pipeline System, with a Chore-Boy Bulk Feed Bin to serve the automatic feeding system. The new Double-Six system is capable of handling many more cows, as the herd is built further. Meanwhile, milking time over the old method has been cut right in half, to four hours. Mr. Clark, already sold on Chore-Boy's low-vacuum benefits, reports that udder health throughout the herd is rated at excellent, and that production, after several weeks on the new system, is already up. Four cranky "old girls" in the herd, who never could adjust to the side-opening stalls, have joined in and are gaining production along with the rest of the herd. The herd average is running at 11,500 lbs. per cow.



Left: Clayton Clark milks 85 cows in a Chore-Boy Double-Six Herringbone System. Right: far-sighted Porter Pike saw the advantages in modern milking methods.

BULK FEEDING IS CHEAPER, SAVES WORK

Did you know that you can save up to $5.00 a ton over bag feed by buying it in bulk? And did you know that Chore-Boy builds the **only** non-bridging bulk feed bin . . . and the only flexible Around-the-Corner auger?

The Chore-Boy bin is equipped with a steel-mesh, continuous-belt carrier which covers the entire hopper opening at the bottom of the bin. This means that all of the feed at the bin opening is carried away in continuous movement. There are no corners or leftover spaces for feed to collect in and bridge. Combine this with the amazing, fiberglass-and-steel Around-the-Corner auger and you have a real time and labor saver! One motor provides the power to move feed to every manger, moving right around curves and corners. Write us for full details!

CHORE-BOY Manufacturing Co.
Division of Golay & Co., Inc.
Cambridge City, Indiana

Please send me full details on the following.

I milk_____cows. Present method of milking_____.

- ☐ Herringbone System
- ☐ Stanchion Barn pipeline system
- ☐ Roll-O-Measures
- ☐ Bulk Feed Bin and flexible auger
- ☐ Free-stall Housing

NAME _____

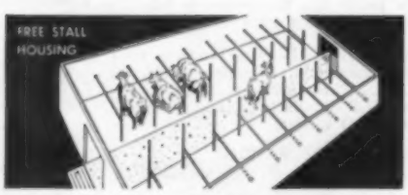
ADDRESS _____

80,000 milking parlors are in use in the U.S. today, according to a survey by the USDA, published in a bulletin entitled "Dairy Cows: Housing and Methods of Milking". Parlors are of all types, and many are obsolete. Pipeline milking systems in stanchion barns are also used, but, according to the survey, in only 3 states do they exceed parlors. The Corn Belt states lead in parlors, with 28,482.

Northeast, Lake States lag in making the change from pail milkers to efficient, labor-saving pipelines. 83% of Northeastern and Lake State cows are still milked with pail milkers. This contrasts sharply with 54% in the Corn Belt, 46% in Northern Plains, down to 34% each in Delta and Southeastern States. Appalachian States are 35% pail-milked, 36% in Southern Plains, 42% on the West Coast.

Why? What is the reason for the slowness in making the logical change from pail milkers to parlor-pipelines in these states? Tradition, habit, climate and investment in stanchion barns are all given as reasons. Where loose housing is not practical, more and more Herringbone Systems are being used with stanchion barns. Although Chore-Boy produces excellent stanchion pipeline milking systems, there is no question as to the advantages of Herringbone efficiency. The rate of milking per man is higher; operators stand erect to work; barns can be bypassed when cows are on pasture.

Chore-Boy Herringbone System is the fastest, most efficient milking system known. One man can milk, handle and feed 3 or 4 times as many cows per hour as he can in stanchion systems, and twice as many as in tandem parlors. Chore-Boy introduced the Herringbone System, and has proven its value in thousands of installations. Chore-Boy Herringbone stalls are best because of patented, exclusive features.



"Perfect marriage" between loose housing and stanchion barns

A revolutionary new concept in cow housing is now presented by Chore-Boy, combining the benefits of loose housing with those of stanchion barns, but without any of the drawbacks of either! Called Free-Stall Housing, the principle has been applied by Adolph Olen, East Stanwood, Washington. For the past year, a 50-cow herd has been housed in a Free-Stall building, each cow with her own 4x8 stall. Stalls are lined along two walls of the building, with a 12-foot-wide concrete strip down the center. Cows are not tied in stalls but may enter and leave to feed and water. Cleaning is easy with a tractor and blade which runs down the concrete strip. One major advantage of Free-Stall Housing is the low bedding requirement—about 10% of bedding needed for loose housing. Cows receive their grain and are milked in a parlor. Chore-Boy manufactures a complete, factory-built building for Free-Stall Housing. Full details are **free** by mailing the coupon at the left.

17 MINUTES TO PRODUCE 100 LBS. OF MILK

According to Ben Shively, County Agent of Randolph County, Indiana, the Chore-Boy Demonstration Farm is turning out 100 pounds of milk for every 17 minutes of the operator's time. According to a time study conducted by Mr. Shively, one man on our farm handles all his duties – milking with a Chore-Boy Double-Six Herringbone, parlor clean-up, hay feeding-everything, in fact, in the daily round of work—in 8 hours, 13 minutes per day. With a 100-cow herd, this figures out to 17 minutes labor to produce 100 pounds of milk! **This is more than 1 million pounds a year from one man's work!** According to Mr. Shively, the Chore-Boy farm requires only 28 hours labor per cow per year, compared with 120 to 150 hours in stanchion barns with pail milkers. You are cordially invited to visit the farm at any time. It is located 4 miles east of Cambridge City, on U.S. 40.

INCREASED PRODUCTION PER COW . . HOW IS IT ACCOMPLISHED?

You can achieve this goal with Chore-Boy Roll-O-Measures, which show the **exact** amount of milk each cow produces at each milking. In addition to helping maintain individual-cow production records, the Roll-O-Measure (a patented feature) provides a vacuum reserve, aiding in milking and separating the functions of milking and raising the milk to the conveying pipeline.